INDEX

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NOTE. In reference Roman figures refer to volumes; dates are given, when paging in volume is not continuous. Names in parenthesis show authority of articles.

A

Adders tongue, IX, 90
Amaryllis—culture of, IX, 55
American Apple Show Association—organized, IX, 88
American Pomological Society, IX, 106–107
Anemone, IX, 90
Anthracnose—on roses, VII, 159
Ants—control of house, IX, 170–171
Aphis, woolly—on roots, IX, 85
Apple blight—
  see Fire blight
Apple canker, VII, 13, S. Oct. '16, 7–8; IX, 156
Apple rust—spray for, VII, 186
Apple scab—spray for, VII, 186
Apple trees—winter protection of, VIII, 50–51
Apples—Culls for sirup, IX, 21
Apples—Culture—
  At Sitka, Alaska, VIII, 7
  In Michigan, IX, 62–64
  On Pacific coast, IX, 63–64
  Must increase planting in U. S., IX, 141–142
  Plant two year tree, VII, 119
  Possibilities of old orchard (Felter) VII, 90–91
  Profitable size orchard, VII, 83, 89
Apples—Culture in Wisconsin—
  At Ashland, VII, 22
  Better quality demanded (Moore, J. G.), VII, 102–103, 108–109, 112
  Planting of farm orchard, VII, 117
Apples—Development of fruit bud, VII, 76, 77–78
Apples—Diseases and pests, VII, S. Oct. '16, 7–8
  See also Spraying; also names of insects and pests, e. g. apple canker; Apple scab; Apple rust; Crotch canker; Crown gall; Fire blight; Mice; Oyster shell scale; Rabbits; Winter injury
Apples—Drying, VIII, 3
Apples—Grading—
  Sizer for, IX, 171
  Wisconsin law on, VII, 200–201, 205; (Potter), VIII, 19–20; (Ball), VIII, 163–165
Apples—Judging—Systematic scoring, VII, 35
Apples—Marketing—
  Culls, VIII, 57, 59
  Direct to consumer(Bassett), VIII, 177
  Honesty in (Moore, J. G.), VII, 102–103, 108–109, 112
Apples—Packing—
  Bench plan, VII, S. Sept. '16, 3
  Bill for standardization introduced in Wisconsin senate, VII, 99–101 . .
  Cold storage for, VII, S. Oct. '16, 6–7
  Delegates to standardization conference at St. Louis, VII, 101
  In barrels (Harley), VII, S. Sept. '16, 1–7
  National standards for, VII, 4–5
  Picking, VII, S. Sept. '16, 3
  Plan for packing and cold storage house, VII, S. Oct. '16, 7
  Standardization of fruit and container, VII, S. Sept. '16, 2
  Stenciling, VII, S. Sept. '16, 5
  Sulzer bill, VII, S. Sept. 16, 1
  Tools, VII, S. Sept. '16, 2
Apples—Pruning—
  For well balanced tree, VII, 85, 89
  Old tree, VII, 78
  Open head, IX, 144
Apples—Recipes, VII, 73–74, 207, 209–211; VIII, 9–10, 105, 106; IX, 48, 64
Apples—Spraying—
  How and when to spray, IX, 102–103; IX, S. Apr. '19, 1
Apples—Storage—Houses for (Allen), IX, 173–175
Apples—Sugar content of, VIII, 103
Apples—Toast to, VII, 71
Apples—Varieties—
  Baldwin, VII, 36
  Delicious—not successful in Wisconsin, VIII, 127
  Dwarf—not successful, VIII, 124
  Fameuse, VII, 36
  For farm orchard, VII, 117
  Greening, VII, 36
  McIntosh, VII, 36
  Northern Spy, VII, 36
  Oldenburg, VII, 36
  Pewaukee, history of, IX, 61
  Pewaukee, evaluation of, IX, 61–62
  Rome Beauty, VII, 36
  Standard varieties, IX, S. Feb. '19, 15
  Trancendent crab—blights in Wisconsin, VIII, 106
  Wealthy, VII, 36
  Winesap, VII, 36
Apples—Yield forecast for U. S. 1916, VII, 36
Arsenate of lead, IX, 163, 167
  Formula, VII, 155; IX, S. Apr. '19, 2–3
  Keeping properties, IX, 137
  Powder form best, VII, 52
Arsenate of lime—Substitute for Arsenate of lead, VIII, 138
Ashes, Coal—For heavy soil, VII, Spec. Ed. Apr. '17, 4
Ashes, Wood—For tarnished plant bugs, IX, S. Feb. '19, 11
Asparagus—
  Canning, VII, 149
  Forcing (Rasmussen), VII, 26; VII, 61; IX, 32–33
  Rust resisting strain, IX, 20
  Spray for asparagus beetle, IX, 139
Aspidistra—for window box, VII, 37
Asters—
  Growing plants to sell, IX, 82
  To eradicate root lice on, VII, 53

B

Baer, J. E.—
  Obituary, VII, 140
  Sketch (Toole, William, Sr.), VII, 153
Ball, E. D.—Wisconsin State entomologist to succeed Prof. Sanders, VII, 24–25

Barberries—
Dangerous and harmless (Ball), VIII, 114–115
Eradicate to save wheat, IX, 24, 95–96
Quarantine against common, IX, 117
Wisconsin law to eradicate harmful, IX, 133
Beans—
Canning, VII, 149
Not suited to rich soil, VIII, 119
Preserving in brine, VII, 202
Raising, VII, 193
Storing, VIII, 46
Varieties, VIII, S. Mar. '18, 2; IX, S. Feb. '19, 5
Beans, string—Drying, VIII, 2–3
Beekeepers' School and Chautauqua—program, IX, 150–151
Bees—
Beekeepers' meetings, IX, 86–87, 102
Buying bees (Fracker), IX, 134–135
Care in spring, IX, 118–119
Conditions for, in Northern Wisconsin, IX, 151
Department at State Fair, IX, 166
Fair honey price, IX, 166
Feeding, IX, 118
Honey exhibit at fair, IX, 102
Inspection law, IX, 134
Queenless colonies, IX, 118
Senate bill 66, for $5,000 appropriation, IX, 102
Swarming undesirable, IX, 119
To prevent European foul brood, IX, 102
Winter protection for, IX, 102
Wisconsin records, IX, 134–135
Beets—
Canning, VII, 150
Raising, VII, 193
Saving seed from, VIII, S. Mar. '18, 7
Storing, VIII, 18; IX, 2
Varieties, VIII, S. Mar. '18, 2; IX, S. Feb. '19, 5
Belladonna—use as drug, VII, 2
Berries—
Demand greater than production, IX, 56
Drying, VIII, 3
Law on boxes, VII, 30
Winter protection of, VII, 20; VIII, 50
Black carpet beetle, VIII, 155
Black leaf "40"—Formula, VII, 52
Black leg—spray for, on cabbages, IX, 92–93
Black rot—treat cabbage seed for, VII, 107
Black spot
see Leaf blotch
Blackberries—
Pruning, IX, 94
Varieties—Snyder versus Ancient Briton, VIII, 6
Winter protection of, VIII, 35–36
Blood root, IX, 90
Blossom—end, IX, 162
Blueberries—
Best soil for, IX, 142–143
Plants wanted for breeding, IX, 142–143
Books on gardening, VII, 142
Books on horticulture, VII, 104
Bordeaux mixture—
For market garden, IX, 115, 127
Formula, IX, S. Apr. '19, 5
To keep, VIII, 159
Bran mash poison—for cutworms, VII, 186–187
Brown, A. D.—obituary and sketch (Toole, William, Sr.), VII, 156
"Brown patch," IX, 146–147
Buds—Selection of citrus fruit, for planting, IX, 89
Bulbs—
Fall planting for spring, VII, 46
For winter and spring forcing (Livingstone), IX, 19, 21
Spring flowering (Martini), IX, 14–15; IX, 28
Use of cold frames in forcing, VIII, 36–37
Buffalo carpet beetle, VIII, 155
Buffalo moth, VIII, 155
Buffalo treehopper, IX, 135

C

Cabbage, Celery, VII, 45
Cabbage, Chinese, IX, 128
see also Petsai
Cabbages—Diseases and pests—
Black leg, IX, 92–93
Control of maggot by tarred felt disc, VIII, 154
Striped flea beetle (Gentner), IX, 103, 124
Worm, control of, VIII, 149–150, 159, 162; IX, 125–126, 151
Cabbages—
Growing plants to sell, IX, 82
Raising, VII, 194
Saving seeds from, VIII, S. Mar. '18, 7
Storing, VII, 195; VIII, 9, 18; IX, 2
Time to plant for winter, VIII, 124
Time to sow seed (Rasmussen), VII, 123
Treat seed for black rot (Vaughan), VII, 107
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Yield in Outagamie county, IX, 99
Calcium arsenate, IX, 167; IX, S. Apr. '19, 3
Calla lilies—culture of, (Livingstone), IX, 55
Candies—recipes, VIII, 59
Canker—on roses, VII, 159
Cannas—storing, VII, 32, 48
Canning and preserving—
Apparatus for home, VII, 202
Greens, VII, 187
Home, VII, 202–203
Use of washing machine in, VII, 204–205
Vegetables, VII, 148–151, 158
Vegetables in brine, VII, 198–199, 201–202
Without sugar, VII, 190
Carbon disulphid, IX, 83
Carrots—
Culture, VII, 193
Saving seed from, VIII, S. Mar. '18, 7
Storing, VIII, 18; IX, 2
Case, Russell—obituary, IX, 6
Catalpa trees—Damage by caterpillars to, VII, 6
Caterpillar, Florida fern, VII, 54
Cats—kill birds, IX, 137
Cauliflower—
Growing plants to sell, IX, 82
Raising, VII, 195
Protection from root maggot (Gentner), IX, 103
Saving seed from, VIII, S. Mar. '18, 7
Cedar apple, IX, 139
Celery—
Culture (Moore, J. G.), VII, 182
Growing plants to sell, IX, 82
Saving seed from, VIII, S. Mar. '18, 7–8
Storing, VIII, 18; IX, 2
Cherries—
Development of fruit buds, VII, 77
Output in Door county, VIII, 91
Spraying, IX, S. Apr. '19, 2
Varieties, IX, S. Feb. '19, 15
Winter injury to blossom buds, VII, 130
Cherry, Chinese, VII, 46
Cherry leaf spot (Keitt), VIII, 117, 119
Cherry slug, IX, 135
Chestnut—effect of blight on, VII, 46
Chestnut, Water—imported from China, VII, 45
Chicory—forcing, VII, 61
Chinese cabbage—
see Cabbage, Chinese
Chrysanthemums—Culture, VII, 114–115
Cider making, IX, 11
Cider vinegar—
see Vinegar, Cider
Climax baskets, VII, 30
Clinton, Mrs. B. P.—obituary, VII, 132
Cold frames—
Care of plants in, IX, S, Feb. '19, 6, 7
For forcing bulbs, VIII, 36–37
Cold storage for towns of 5,000, IX, 15
see also Apples, Packing
Collar rot, VII, 12–13
Community improvement, VII, 98, 106
Corn—
Canning, VII, 150, 158
Drying, VII, 158; VIII, 2
Hulling, VIII, 4
Preserving in brine, VII, 202; (Toole, William, Sr.), VII, 206–207
Raising, VII, 195
Corn borer (Fracker), IX, 171–172
Corn ear worm (Gentner), IX, 170
Cottonseed meal—for roses, IX, 83
Cottony maple scale, VII, 120
Cranberries—
Blight on, VIII, 165
Campaign to increase demand, VII, 35
Concrete flumes, IX, 148
Containers for shipping (Chaney), IX, 100
Cranberry Lake Development Company, IX, 148
Cultivating and fertilizing with water, VIII, 148
Culture of, IX, 164
Demand for better, VII, 68; IX, 4

Ethics of growers, IX, 164-165
Experimental bog, VII, 3, 35
False blossom on, VIII, 165; IX, 148-149
Fertilizer for, VIII, 165
Fireworm, control of (Chaney), VIII, 116
Flooding, VII, 51; VIII, 100
Flooding destroys pests, X, 116
Flooding destroys pests, IX, 116
VIII, 132
How to improve bog (Huyck), IX, 68-69
In Washington, IX, 132
Insect pests, IX, 116
Jelly in wholesale quantities, VII, 51, 55
Land suitable for, IX, 52
Need bees, VIII, 174
Not sugar waste, VIII, 133
Picking, IX, 84
Pruning, VIII, 101
Recipes, VII, 19, 69-70; IX, 30, 42, 116
Sanding (Huyck), VIII, 174
Scum on, IX, 132
Spring killing of, VIII, 148
Spring work on (Searles), VIII, 100
Storing, VII, 69
Value of acid in, VII, 69
Yield per acre, 1916, VII, 84
Cranefield, Marion C.—obituary, IX, 4
Crawford, Matthew—obituary and sketch of, VIII, 135
Crocus—Planting, VII, 46; IX, 14
Varieties, IX, 14
Crops—
Succession of, in garden (Hepler), VII, 135
Crotch canker, VII, 186
Crown gall (Fracker), VIII, 139
Crown rot, VII, 12, 186, 156
Cucumber beetle, VII, 206; VIII, 150-151, 153, 154; 162-163
Cucumber salad for winter, VII, 202
Cucumbers—
Not suited to small garden, VII, 138
Preserving in brine, VII, 202
Treat seed for disease, VIII, 139
When to start seed, VII, 138
Currant worm, VII, 157; IX, 94, 124
Currants—
At Sitka, Alaska, VIII, 7
Damage by worm, VII, 157
Fall planting of, VII, 10
Pruning, IX, 93-94
Winter protection of, VIII, 35
Cut worms—poison bran mash for, VII, 186-187; VIII, 147, 154; IX, 126, 139; IX, S. Feb. '19, 11
Cyclamen, VIII, 55, 134

D

Dahlias—
Storing, VII, 48
Varieties, VII, 141
Dandelions—eradication of, VII, 119
Delphiniums (Toole, William, Sr.), VIII, 21, 29
Digitalis—use as drug, VII, 2
Door County Fruit Growers' Association—organization, VIII, 90-91
Drug plants—Demand limited in U. S., VII, 1-2
Dry lime sulphur
see Lime sulphur, dry
Drying fruit and vegetables, VII, 156, 191; VIII, 2-3, 170
Dutchman's breeches, IX, 90
Dutchman pipe, VIII, 134

E

East Milwaukee Civic Association, VII, 98, 106
Egg plant, IX, 82
Elm leaf gall, IX, 154-155
Endive—storing, IX, 2
Evergreens—Time to transplant in Wisconsin, VIII, 36
Exhibits, fraudulent, VII, 55

F

Ferns—
Culture of (Livingstone), VII, 125, 127; VIII, 134
Spraying, VII, 127
Fertilization of orchard, IX, 39, 45
Fertilizers and manures, VIII, 6; IX, 130-131
Fire blight, (Vaughan), VII, 184-186; VII, S. Oct. '16, 8
Fire worm—on cranberries, VIII, 116
Fitch, J. W.—obituary, VII, 100
Flea beetles, VIII, 154; IX, S. Feb. '19, 11-12
Fleur-de-Lis, IX, 137
Flowers—
Annuals, IX, 169
At State Fair, VII, 32; VIII, 54
Facts about (Livingstone), VIII, 134
Florists' telegraph delivery, VIII, S. Mar. '18, 3
For home planting, VIII, 106
For war garden, VIII, S. Mar, '18, 3
Growing plants to sell, IX, 82-83
Watering, VII, 37
West Allis Garden club, VII, 116-117
Flowers, wild—
Grouping, IX, 90
Transplanting (Toole, William, Sr.), IX, 89-91
Forty niner's diary (Kellogg, J. G.), IX, 71, 76-77
Fracker, S. B.—sketch of, IX, 31
Fruit and garden institutes, VII, 62, 88
Fruit culture—
At Sitka, Alaska (Anderson), VIII, 7
Fall planting (Telfer), VII, 10
In Michigan (Kern), IX, 62-64
Injury to, in France, IX, 104-105
Fruit—
For home planting, VIII, 106
Drying, VII, 156, 191; VIII, 2-3, 170-171, 176
Peeling with lye, VIII, 4
Storing, IX, 2, 8
Winter protection of trees, VIII, 50-51
Fruit buds (Roberts), VII, 76-78
Fumigation, VII, 52

G

Gall—On elm and maple, IX, 154-155
Garden snail, VIII, 176
Gardener's Advisory Council, VII, 188-189; VIII, 52-53, 55, 73
Gardening—Books on, VII, 142
In France, IX, 105-106
Gardens—Tools for, VII, 146-147
Backyard (Rasmussen), VII, 133
Care in August, VIII, 175
Care in October, IX, 22
City, VII, 132, 135
Crop table, VII, 135
Cultivation (Moore, J. G.), VII, 146; IX, S. Feb. '19, 9-10
Fertilizers for, IX, S. Feb. '19, 7-8
Home, VIII, 131, 162
Irrigation of, VII, 157
On sod, VII, 134
Planting (Hepler), VII, 130
Produce of amateur, VIII, 94
Protect from insects (Gentner), IX, S. Feb. '19, 11-12
Sanitation of (Moore, J. G.), VII, 154
Soils, IX, S. Feb. '19, 7-8
Sowing the seed, IX, S. Feb. '19, 8-9
Tools for, VII, 146-147
Gardens, Victory, IX, 60, 88; IX, S. Feb. '19, 3
Gardens, War—
Depth to sow seeds, VIII, S. Mar. '18, 5
Eau Claire, IX, 23
Making the, VIII, S. Mar. '18, 4
Milwaukee, IX, 7-8
National war garden commission, IX, 137
Organization of, VIII, 89-90
Oshkosh, VIII, 83
Planning, VIII, S. Mar. '18, 7; IX, S. Feb. '19, 1
Preparation of soil, VIII, S. Mar. '18, 4-5
Report from Green Bay, IX, 43-44
Use tested seeds, VIII, S. Mar. '18, 4
Value in U. S., VIII, 63
Garlic—storing, IX, 2
Geraniums—storing, VII, 36
Ginseng—difficult to grow, IX, 55
Gladioli—storing, VII, 27, 48
Gooseberries—
At Sitka, Alaska, VIII, 7
Fall planting of, VII, 10
Pruning, IX, 93-94
Winter protection of, VIII, 35
Grafting—
For the beginner, VII, 82-83
Top, VII, 122-123
Grafting wax, VII, 123
Grain rust (Fracker), IX, 95-96
Grapes—
Law on making wine, VII, 10
Marketing, VII, 183
Varieties, VIII, 124
Winter protection of, VII, 20; VIII, 50
Grasshoppers—destroying of, VIII, 154; IX, S. Feb. '19, 11
Green dragon arum, IX, 90
Green lice, VIII, 175

4874

Greens—
Canning, VII, 187
Drying, VIII, 3
Ground cherries—storing, IX, 2

H

Hale, John Howard—sketch of, VIII, 58–59
Harebell, IX, 89
Head lettuce
see Lettuce, Head
Hellebore, IX, S. Apr. '19, 3
Hepatica, IX, 89
Home grounds
see Landscape gardening
Horsemint—Thymol extracted from, VII, 2
Horseradish—Storing, IX, 2
Horticultural papers, VII, 88–89
Horticultural societies—
Le Societe National d' Horticulture De France, IX, 98–99
Manitowoc County Horticultural Society, VII, 9
Report of delegate to Northern Illinois, VII, 93–94
Horticulture—
As a vocation (late E. S. Goff), VII, 26; IX, 38
Books on, VII, 104
Future of, in Wisconsin, (Moore), VIII, 85–87, 94
History of, (late E. S. Goff, IX, 50–51
In Alaska, VIII, 43–45
In education, VIII, 10–14
Lectures by the late E. S. Goff in 1887, IX, 26, 38, 50–51
Hotbeds—
Care of plants in, IX, S. Feb. '19, 6–7
Making (Toole, William, Sr.), VIII, S. Mar. '18, 8
When to start, IX, 85
Household pests (Sanders), VIII, 155
Houseplants in winter, IX, 3
Husk tomatoes
see Ground cherries
Hyacinths—
Indoor culture of (Moore), VII, 7, 14; IX, 19
Planting of, VII, 46
Varieties, IX, 15

I

Insect pests (Fracker), VII, 52–54; (Moore, J. G.), VII, 154–155
Insecticides—
Efficiency of common (Wilson), IX, 162
For roses, VII, 160
Formulas, VII, 155, 160
Outlook for 1918, VIII, 74
Prices of (Wilson), VIII, 43
International Apple Shippers' Association, IX, 136, 153, 156–157
Iris, German—
Nomenclature of, IX, 137
Varieties, VII, 33
Irrigation—
For garden, VII, 157
Need for lessened by tillage, VII, 157
Overhead (Rasmussen), VII, 123; (Rasch), VIII, 91–92
Spray systems, VIII, 155–157
Ivy, Kenilworth, VII, 37

J

Jacob's ladder, IX, 90
Jeffrey, George, Sr.,—obituary and sketch, VII, 137
Jujube, VII, 44, 45

K

Kauba, VII, 45
Kellogg, G. J.—Forty niner's diary, IX, 71, 76, 77
Kellogg, G. J.—in memoriam, IX, 70
Kerosene emulsion—
Formula, VII, 155; IX, S. Apr. '19, 4
Not successful for woolly aphis, IX, 85
Kohlrabi—
Storing, IX, 2
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5

L

Ladder—plan for, VII, 92
Lady bug, IX, 140
Lady slipper, IX, 89
Landscape gardening—
Beautifying farm home grounds, VII, 84–85
Planting of rural home grounds (Martini), IX, 111–112
Lawns—
Beautifying farm, VII, 84–85
"Brown patch" on, IX, 146–147
Care of, VIII, 98–99
Making, IX, 117
Planting of rural, IX, 111–112
Le Societe Nationale d'Horticulture De France, IX, 98–99
Lead arsenate, VII, 186
Leaf blight—
see Leaf spot
Leaf blotch—on roses, VII, 39, 159
Leaf roller, VII, 54
Leaf spot—
Control of, VII, 86, 87, 90, 131
Nature of, VII, 86, 131
On cherry, VIII, 117–119
On roses, VII, 159
On tomato, IX, 162
Leaves—why change color, IX, 15
Lemon grass—Use for oil, VII, 2
Lettuce—
Growing plants to sell, IX, 83
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Lettuce, Head—storing, IX, 2
Lice, plant
see Plant lice
Lilies, Spider, IX, 89
Lilies, Turk's cap, IX, 89, 90
Lime—for sour soil, VII, Spec. Ed. Apr. '17, 4
Lime sulphur—
Amount needed (Ball), VIII, 125
Effect of freezing on, IX, 106
Home-made versus commercial, VIII, 140–142
Lime sulphur, Dry, IX, 133
Lime sulphur solution—
For red spider, VII, 54
More effective than soluble compound (Fracker), VII, 124
Lupine, IX, 90
Lye—Peeling fruit with, VIII, 4

M

Maple leaf gall (Fluke), IX, 154–155
Maples—spraying for cottony maple scale, VII, 120
Market gardening—
Fertilizers for, IX, 130–131
Growing plants to sell, IX, 82–83
On ten acre lot, IX, 77–80
Spraying, IX, 114–115, 127
Marketing—
Honesty in (Moore, J. G.), VII, 102–103, 108–109, 112
In Michigan, IX, 62
Organization needed (Kern), VII, 34, 38
Mice—
Poison for, VIII, 38–39
Protect orchard from, VII, 20, 21; VIII, 50–51
Tarred paper protects against, VII, 73; IX, 55
Mildew, VIII, 93
Moths, VIII, 155
Mushrooms, Poisonous, VII, 67
Muskmelons—
Culture (Rasmussen), IX, 91
Not suited to small garden, VII, 138
Use of "dirt bands," IX, 91
When to start seed, VII, 138

N

Narcissus—
Forcing, IX, 21
Indoor culture of (Moore), VII, 7, 14, 23
Planting or, VII, 46
Varieties, IX, 14, 121
National Congress of Horticulture, VII, 49–50; VIII, 71
National War Garden Commission, IX, 137
Nicotine sulphate, VII, 155
Nursery stock—Restriction of importation considered, VIII, 133

O

Onion sets, VII, 161, VIII, S, Mar. '18, 3; IX, S. Feb. '19, 5
Onion thrip, IX 101
Onions—
Forcing, VII, 26
Growing, VII, 194
Growing for winter, VII, 161
Saving seed from, VIII, S. Mar. '18, 8
Storing, VII, 194; VIII, 19; IX, 2
The onion family, VII, 161
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5

Orchard—
Calves in, VII, 70
Care of (Harrison), VII, 70
Cropping, IX, S. Feb. '19, 15
Cultivation, IX, S. Feb. '19, 15
Farm, VIII, 86–87, 94, 105; IX, 20, 53, 59
Fertilizing, IX, 39–45, 158
In France, VIII, 74–75
Planning and planting (Cranefield), IX, S. Feb. '19, 14–15
Pruning, IX, S. Feb. '19, 15
Starting the fruit farm (Bingham), VIII, 108–111
Taxing, VIII, 127
Washington's orchard, VII, 206
Orchards, Trial, VIII, 67
Orchids—
Butterfly, VIII, 133
Injury to, by weevil, VII, 27
Oyster shell scale, IX, 121

P

Pansies—
Culture (Toole, W. A.), VII, 124
Growing plants to sell, IX, 83
Paris green, IX, 163; IX, S. Apr. '19, 3
Parsley—storing, IX, 2
Parsnips—
Raising, VII, 193
Saving seed from, VIII, S. Mar. '18, 8
Storing, VIII, 18; IX, 2
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Peaches—imported from China, VII, 45
Pear blight
see Fire blight
Pears—Drying, VIII, 3
Peas—Canning, VII, 149
Drying, VII, 187; VIII, 3
Varieties, VIII, 105; VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Peonies—
Cultivation, IX, 59
Fall planting of, VII, 10
Varieties, VII, 33–34
Varieties for succession of bloom, IX, 57–59
Pepper, Red—Growing in the U. S., VII, 7
Peppers—Growing plants to sell, IX, 82
Perennials—
Hardy varieties, VII, 33
Winter protection of, VII, 21, 38
Persimmon, Chinese, VII, 44
Petsai, IX, 75, 128
Philips, A. J.—obituary and sketch, VII, 121
Phlox—varieties, VII, 34; VIII, 37
Phlox, Wild, IX, 89, 90
Phosphate, Acid—good fertilizer, IX, 46
Pine, White—Imported from China, VII, 46
Pinks, Wild, IX, 91
Pistache tree—Imported from China, VII, 46
Plant a tree in France, IX, 104–105, 120, 155
Plant lice—
Aphids on spirea, VII, 53
Soap spray for, VII, 186; VIII, 154; IX, 124; IX, S. Feb. '19, 11
Plants—
Diseases in Wisconsin, 1918 (Vaughan), IX, 91–93
Imported from China by Meyer, VII, 44–46
Restriction of importation into U. S. (Fracker), IX, 146
Plums—
Development of fruit bud, VII, 76–77
Hansen hybrids versus Americanas, VII, 119
Pruning, VII, 119
Spraying, IX, S. Apr. '19, 2
Varieties, IX, S. Feb. '19, 15
Point rot, IX, 162
Poison bran mash—
For cutworms, VIII, 134, 147; IX, 126, 139; IX, S. Feb. '19, 11
For grasshoppers, VIII, 154, IX, S. Feb. '19, 11
Poisons—For chewing insects, VIII, 154
see also Insectsides, Spraying, etc.
Potatoes—
Distance of planting, VII, 135
Early varieties, VII, 134
Fertilizers for, IX, 130
Grading, VIII, 23
Raising (Milward), VII, 134
Raising in city lot (Milward), VIII, 121–122
Leafhopper on, IX, 154
Seed, VII, 134
Spraying, VII, 134, 192; VIII, 162; IX, 139
Storing, VIII, S. Mar. '18, 3; IX, 2
Potatoes, Sweet—storing, IX, 2
Powdery mildew—on roses, VII, 159
Premiums—
see heading Premiums under State Fair; Wisconsin State Horticultural Society
Primulas—Potting of, IX, 3
Pruning—
Bush fruits, IX, 93–95
Methods of, IX, 158
Saw for, IX, 144
Why and how (Beyer), IX, 143–144
Pumpkins—
Drying, VIII, 3
Storing, IX, 2

R

Rabbits—
As a food, VIII, 76
Protect orchard from, VII, 20, 21; VIII, 38–39; 50–51
Protected by Fish and Game bill, VII, 120
Tarred paper protects trees from, VII, 73; VIII, 50–51; IX, 55
Tile trap for, VII, 31
Radish, Chinese, VII, 45–46
Radishes—Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Radishes, Winter—Storing, IX, 2
Raspberries—
Cane wilt of (Townsend), VII, 6
Culture (Cranefield), IX, S. Feb. '19, 13–14
Destroy infected canes, IX, 135
Picking, VII, 11
Plant on farm, IX, 99
Pruning, IX, 94
Spray for beetle, IX, 139
Varieties—
King versus Brandywine, VIII, 6–7
Minnesota No. 4, VIII, 175; IX, 23
Not suited to Wisconsin, VII, 92
Winter protection of, VIII, 35–36
Raspberries, Black—
Culture (Hays), VIII, 83–85; IX, S. Feb. '19, 13–14
Scab on, VIII, 84
Raspberries, Red, IX, S. Feb. '19, 13
Raspberries, purple, IX, S. Feb. '19, 14
Red spider—
At Lake Winnebago, VII, 25
Spray for, VII, 25, 54
Rezin, Mrs. Daniel, Sr.—obituary, IX, 84
Rhubarb—
Culture (Eastman), IX, 54
Drying, VIII, 3
Forcing (Rasmussen), VII, 26, 50, 60–61, VIII, 51
Varieties, IX, 54
Root lice—On asters, VII, 53
Root rot, IX, 156
Roots—Winter injury to, VII, 12
Roses—
Acid phosphate for, VII, 26
Cultivation of, IX, 109
Culture, IX, 66–67, 122
Diseases and pests—
Anthracnose, VII, 159
Aphid, VII, 160
Canker, VII, 39, 159
Insect pests, VII, 159–160; IX, 67, 122–123
Leaf blotch, VII, 39, 159
Leaf spot, VII, 159
Powdery mildew, VII, 159
Rose rust, VII, 159
Scale, VII, 160
Slug, VII, 160
Thrip, VII, 160
For cut flowers, VIII, 98
In Minnesota, IX, 122–123
Planting, VIII, 123–124, 160
Planting of cut flower, IX, 109
Planting "worked stock," IX, 66
Propagating, VII, 39; IX, 108–109
Pruning, VIII, 157–158; IX, 66, 109–110
Spraying, VII, 39
Varieties, IX, 67, 122
American Beauty, VIII, 134
For borders, IX, 83
Rosa Xanthina, VII, 46
Rugosa, IX, 83
Winter protection of, VII, 20–21; VIII, 50; IX, 31, 67, 110
Rudbeckias, VII, 23, 27
Rutabagas—
Storing, VIII, 18; IX, 2
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Rye hoe cakes, VIII, 93

S

Salsify—
Saving seeds from, VIII, S. Mar. '18, 8
Storing, VIII, 18
Salvia—Growing plants to sell, IX, 82

San Jose' scale—
At Kenosha, VII, 53–54
At Milwaukee, VII, 54
Identifying, VII, 53
Sanders, J. G.—Wis. State entomologist leaves, VII, 24–25
Sansveria Zeylancia, VII, 134
Sauerkraut, VII, 199; IX, 36
Sawdust as manure, VIII, 6
Scum on cranberry vines, IX, 132
Seakale—Forcing, VII, 61
Seed tape—Of doubtful value, VIII, S. Mar, '18, 3; IX, S. Feb. '19, 5
Seedlings—Thinning, VII, 131
Seeds—
Buy best, VIII, S. Mar. '18, 3; IX, S. Feb. '19 5
Germinating temperatures VII, 130
Planting, VII, 130
Quantity required, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Raising for own use, VIII, S. Mar. '18, 6–8
Sowing (Cranefield), IX, S. Feb. '19, 8–9
Sowing indoors (Moore, J. G.), VII, 122
Shot hole fungus—
see Leaf spot
Shrubs for fall planting, VII, 10
Sirup from apple culls, IX, 21
Soap spray—For plant lice, VIII, 154; IX, S. Feb. '19, 11
Sodium cyanid—Not successful for woolly aphis, IX, 85
Soil fertility—
In orchards, IX, 39, 45
Insured by tilling, VII, 146–147
Measurements in (Jordan), IX, 149
Soils—
Garden (Cranefield), IX, S. Feb. '19, 7–8
Lime for sour, VII, Spec. Ed. Apr. '17, 4
Mulch needed, VII, 157
Sparrows as a food, VIII, 77
Spinach, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Spirea—
Pruning, VIII, 164
Spray for, VII, 53
Spraying (Fracker), IX, S. Apr. '19, 1–6
Apparatus, IX, 114–115; IX, S. Apr. '19, 2–6
Barrel pump, VII, 118
Compressed air pump not good, IX, 140
Cost of, VII, 83
Double acting pump, VII, 118
Duster, VIII, 146–147
Gasoline pump, VII, 118
Hand pump, VIII, 138
Home-made power pump, VII, 115
Pumps for communities, VII, 137
Spray gun, VIII, 107; IX, 38–39, 140
Traction spray not successful (Ball), VII, 153
Avoid while fruit is in bloom, IX, 103
Bush fruits (Kiethly), IX, 93–95
Cost of per acre apples (Bingham), VII, 157
Determine pest before, VII, 154
Dusting valuable, VIII, 146–147
Formulas, VII, 155
Liquid versus dust, IX, 157
Market garden (Thompson), IX, 114–115, 127
Materials, IX, 133
Substitutes for Bordeaux, VII, 87, 90
Useless for some worms, VII, 187
Value of (Ball), VII, 126; (Roberts), VIII, 25
Spring beauty, IX, 90
Squash—
Drying, VIII, 3
Storing, VIII, 19; IX, 2
Squash bugs—
Control of, VIII, 154; IX, Feb. '19, 11
Trap plant for, VII, 154
State Fair—
Horticultural exhibit at, VII, 18, 21; IX, 16
Premiums awarded at, VII, S. Oct. '16, 1–6
Strawberries—
At Ashland, VII, 22
At Bayfield, VIII, 10
Culture, IX, S. Feb. '19, 12–13
For home market (Cranefield), IX, S. Feb. '19, 12–13
Hill planting versus matted row, VIII, 107, 108
On farm, IX, 99
Planting in fall, VII, 10
Profitable crop, VII, 85
Varieties, VIII, 124
Winter protection of, VII, 21; VIII, 36, 51
Strawberries, Everbearing (Kellogg), IX, 119; IX, S. Feb. '19, 12–13
Striped beetle, VIII, 150–151, 153; IX, 138, 169
Striped cucumber beetle, IX, 138
Striped flea beetle, IX, 103, 124
Sulzer bill
see Apples—Packing
Sunscald, VII, 12, 186
Sweet peas—
Culture for exhibition, VII, 66–67
Starting indoors, VIII, 137
Varieties, VII, 67
Sweet potatoes
see Potatoes, Sweet
Syrup—Beet sugar, not successful, VIII, 136–137

T

Tarnished plant bugs, VIII, 154; IX, S. Feb. '19, 11
Tarred felt discs, VIII, 154; IX, 103
Tarred paper—Protect trees, VII, 73
Thymol—Extracted from horsemint, VII, 2
Tobacco spray, IX, S. Apr. '19, 3–4
Tomato mosaic, IX, 162
Tomato paste, VII, 189–190
Tomatoes—
Canning, VII, 151
Growing plants to sell, IX, 82
Diseases, IX, 162
Storing, IX, 2
Time to sow seed, VII, 123, 139–140
Training, VII, 134, 139–140; VIII, 175; IX, 169
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5
Tomatoes, Husk
see Ground Cherries
Top grafting
see Grafting
Tractor for gardening, IX, 167, 176
Transplanting—What and how, VII, 160–161
Tree that fought for France, VIII, 102–103
Treleven, Mrs. Joseph D.—Obituary, IX, 126–127
Trial orchards
see Orchards, Trial
Truck farming—
see Market gardening
Tulips—
Planting, VII, 46; IX, 14, 19
Varieties, IX, 14, 21
Turnips—
Growing, VII, 194
Saving seed from, VIII, S. Mar. '18, 8
Storing, VIII, 18; IX, 2
Varieties, VIII, S. Mar. '18, 3; IX, S. Feb. '19, 5

V

Vegetable oyster—Storing, IX, 2
Vegetables—
Canning, VII, 148–151, 158
Drying, VII, 156, 191; VIII, 2–3, 170–171, 176
Early (Moore), IX, S. Feb. '19, 6–7
Growing plants to sell, IX, 82
Insect pests, VII, 155
Irrigation, VIII, 91–92
Preserve by fermentation, VII, 198–199, 201–202
Raising, VII, 135, 193
Saving seeds from, VIII, S. Mar. '18, 6–8
Space needed for, VIII, S. Mar. '18, 2; IX, S. Feb. '19, 2
Storing, VIII, 8–9; VIII, 18–19, 34–35, 46; IX, 2, 8, 47
Time required to mature, VIII, S. Mar. '19, 2; IX, S. Feb. '19, 2
To avoid in small garden, VIII, S. Mar. '18, 1, 2; IX, S. Feb. '19, 4–5
Varieties, VIII, S. Mar. '18, 2–3; IX, S. Feb. '19, 4–5
Village fair, VII, 98, 106
Vinegar—Making cider, IX, 11
Vinegar "bees," IX, 159–160
Vine crops—
Not suitable for small garden, VII, 138
Seldom cross, VII, 138
Starting seeds for, VII, 138

W

Wages, IX, 6
Washington's orchard, VII, 206
Watering—
see Irrigation
West Allis Garden Club, VII, 116–117
Whale oil soap, VII, 54

White grub, IX, 170
White hellebore—
As substitute for arsenic, VII, 52
For currants, VII, 157
see also Hellebore
Wild flowers—
see Flowers, Wild
Window boxes, VII, 37; IX, S. Feb. '19, 6-7
Wine from surplus grapes, VII, 10
Winter injury, VII, 12-13, 15
Wisconsin Horticulture—
Bound sets for sale, VII, 141
Patriotic number, VII, July 4, 1917
Wants wider circulation, VII, 72, 88
Wisconsin State Beekeepers Association, IX, 86-87
Wisconsin State Cranberry Growers' Association, VIII, 5, 95; IX, 6, 68
Wisconsin State Florists' Association, IX, 165
Wisconsin State Horticultural Society—
Annual Convention, 1916, 7, 56-60, 72; 1917, VIII, 66-67, 72, 78-79; 1918, IX, 57-58, 72-74, 76
Constitution and by-laws, IX, 89
Diversified interests of, IX, 85
Increase membership of, IX, 88-89
Premiums at Annual convention, 1916, VII, 74-76; 1917, VIII, 68-69; 1919, IX, 32-34, 73-74
Premiums at Summer meetings, 1918, VIII, 173; IX, 5
Summer meetings (at Oshkosh), VIII, 8; (at Baraboo), IX, 5, 10, 17; (at Lake Geneva), VII, 8, 28-29
Woolly Aphis—
see Aphis, Woolly

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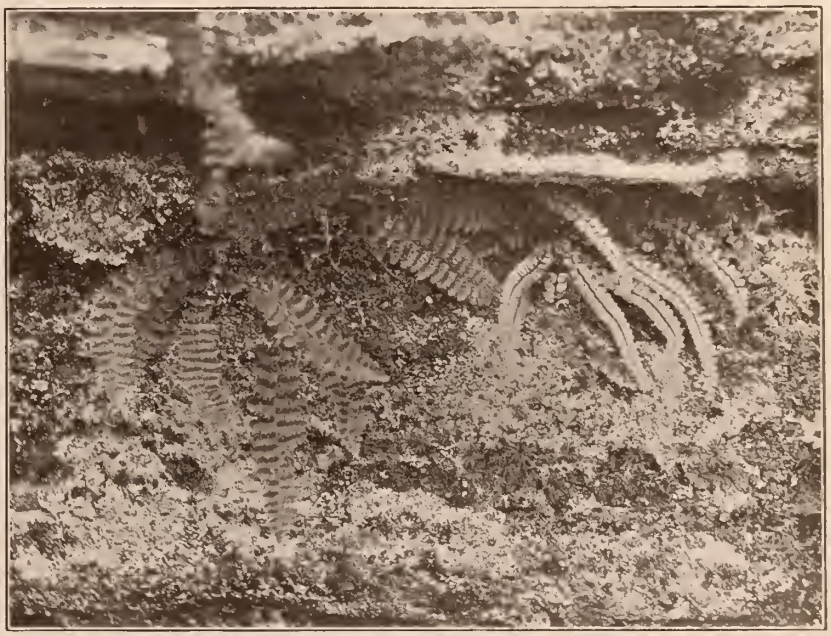
Caution to Prospective Drug Growers

Interruption of importations of many drugs, spices, and oils made from plants has resulted in certain cases in abnormally high prices for the raw materials and the products derived from them. As a result, many people are looking into the possibility of profit in growing these crops in the United States. Many letters are received each week at the U. S. Department of Agriculture asking how to raise this or that drug plant.

In almost every case, the drug plant specialists reply that it is doubtful whether the inexperienced grower can grow these plants successfully, or, if he succeeds, will find a satisfactory market for his crop. The raising of such plants, they point out, is a distinct specialty and calls for exact knowledge and skill comparable to that needed by the florist who, to satisfy his market, not only must raise flowers but must produce blooms at certain seasons and with unusual characteristics. Of even greater importance, however, is the fact that the total amount of drug plants that can be consumed in this country in any year is very small compared with our consumption of any of the staple crops. Over production in the case of drugs is more serious than in the case of staple crops because staple crops such as corn and grain if not sold can be used at home for food or for feeding stock or chickens. The drug plant, however, is profitless



Cystopteris fragilis. **Asplenium Trichomanes.**

Two exquisite Wisconsin ferns. These and other ferns were plentiful through central and southern Wisconsin 20 years ago but the ruthless hand of the summer boarder and "resorter" has left but few of them.

(Continued on page 2)

to the grower unless a drug manufacturer will buy it for use in medicine.

It is entirely possible, for example, to grow belladonna from which is derived atropine and other alkaloids very valuable in medicine. The total amount of belladonna plants the entire country uses, however, could all be grown on a few hundred acres. Because of the present interruption in the supply of belladonna, a few domestic growers have made a profit recently from this crop. A slight expansion of the industry would quickly increase the supply beyond the demand and this, together with importation, when resumed, might soon glut the local market and leave little or no profit to the raiser, unless an export market were developed.

Digitalis, although one of the most important and valuable of heart tonics, as a crop has relatively small monetary value. The drug plant specialists who have been developing this plant and testing possibilities of its culture in this country have done so, not merely with the idea of fostering an industry, but because this plant is so important in saving human lives that should all supplies be cut off a serious calamity would result. For the same reason the specialists have been working with many other drug plants. It was believed that the drug specialists should be ready to raise these plants in this country if for any reason the foreign supply should be entirely cut off.

For years, therefore, the Department has been producing many of these plants experimentally, but when the supply of certain of these drugs failed or their prices reached prohibitive figures, a few skilled growers, with the advice of the Department, were able to raise small quantities of some of the more important drugs needed in the present emergency. Thymol, widely used for antiseptic purposes, is a drug manufactured in Germany from a seed grown in India. A few days after the interruption of imports the price leaped from $2 to $17 a pound. The Department, however, had been experimenting with a common weed known as horsemint, which grows readily in the South, and yields this substance. This horsemint was brought into cultivation, its drug-bearing quality improved, and a simple process for manufacturing thymol from it developed, with the result last year that there was produced commercially a small quantity of this drug. The industry, however, can not be widely extended because the total consumption, as indicated by previous reports, is only about 17,000 pounds a year, an amount which can be produced probably on less than 1,000 acres.

Lemon grass, producing lemon grass oil used widely by soap and perfume makers, can be grown in Florida on land not suitable for citrus fruits. At most, however, only about $100,000 worth of this oil is used per year in this country, and even if none were imported, only 2,000 or 3,000 acres of the grass could be raised without overproduction.

Red pepper, used both as a drug and as a condiment, seems to offer one of the most promising fields for replacing an imported by a domestic article. In 1915 in South Carolina 118 acres, yielding 152,000 pounds, were harvested. There is indication that this year nearly 500 acres may be devoted to this crop. As 1 acre produces nearly 1,300 pounds and our total imports in 1914 were only 8,829,487 pounds, it readily can be seen that a limited acreage would provide all the pepper this country ordinarily consumes.

In addition to the products mentioned, there are hundreds of other drugs, oils, and spices which are imported and which it is possible for this country to prodcue for itself. In the aggregate, the value of these imported articles is rather imposing, as the figures indicate that this country has been bringing in and using about $25,000,000 annually of the various drugs, oils, and condiments. Much of this money undoubtedly can be kept at home. The mistake made by most people who consider raising these crops is that they are inclined to consider them as staple crops, whereas the domestic demand for them is relatively small, and no foreign market has been developed for them by Americans.

At the same time those in charge of the work realize that here and there in our agriculture, where soil and climatic and other conditions are right, there is room for certain small industries. For many years there has been a distinct tendency for agriculturists to direct their energies along limited lines. This is indicated most clearly by certain types of agriculture prevailing in the South, where the farmers have confined their efforts very largely to the cultivation of a single crop. These small crops may therefore offer to a few of our farmers opportunities in highly specialized lines of production which will divert to a certain degree the activities of capital and labor from some of the crowded industries and also supply peculiar products for which the country has been spending money abroad. The

(Continued on page 11)

CRANBERRY NOTES

By J. W. FITCH

The Twenty Ninth Summer meeting proved to be a very interesting one. The crop on Mr. M. O. Potter's vines, at which place the meeting was held, looked very good though Mr. Potter said it was not as good as last year. The crop on the experiment station was good and things looked to be in good shape especially since Mr. Malde has had less work done than usual. The meeting after dinner in the Potter warehouse was given largely to the discussion of the future of the experiment station. Most of the leading growers expressing themselves, and all seemed to feel the necessity of continuing the work of the station and while some seemed to think that the fact that large crops had not been raised on the station, was the result of mismanagement. Most of the growers seemed to feel that no one under the same conditions would have done any better or as well as Mr. Malde. Owing to a rather inadequate water supply the vines on the station have been badly winter killed some seasons and the bad effects of this reaches over more than one season, and during frosts Mr. Malde has at times refrained from using water when he thought it was needed by the Gaynor Co. But it remained for Mr. Cranefield to hit the nail on the head when he showed clearly the difference between a station for research and a demonstration station, this one being established for research it was not to be expected to be a profitable one in a commercial sense. In view of the fact that many of the growers favor putting the station on a self supporting basis as the one on Cape Cod is, the following extract from the Wareham Courier is interesting."

Unless the consent of the Gayner Cranberry Co. to renew the lease can be obtained the station will be moved, and a number of growers at Cranmoor and Mather have offered sites. Andrew Searls, F. J. Hoffman, J. W. Fitch, C. M. Secker, A. B. Roberts were appointed to make the best arrangements possible.

Assistant Dean Morrison of the Agricultural College was present to learn the growers' views as to the value of the station and many growers told how highly they valued Mr. Malde's services. Mr. Cranefield's talk on the value of a cranberry exhibit at the State Fair as an advertising opportunity was very convincing and the committee appointed last January of C. M. Secker, C. R. Treat, O. G. Arpin and J. W. Fitch will have charge of it. The Sales Co. voted $250.00 towards the expense of same. In addition to the regular exhibit of growing vines festoons and plates of berries, a demonstration of how to cook cranberries and the serving of properly cooked berries will be in charge of Mrs. S. N. Whittlesey. It is earnestly urged that all growers compete for the prizes on cranberries which the fair management has so liberally awarded for this branch of Horticulture. The date for the January meeting was changed to the first Tuesday after the first Monday in January. Funds were voted from this years state aid to complete the pumping experiment at Mather.

Beneficial Experimentation.

Prof. Franklin at Massachusetts State Bog Doing His Best

When the state of Massachusetts established a state cranberry exeriment station at East Wareham, it recognized the importance of the industry to the state and the necessity of sicentific investigations of the problems which enter into the growing of cranberries.

When Dr. H. J. Franklin was designated to take charge of it, a wise choice was made for he has proven an earnest investigator with a scientific turn of mind who works hard and laboriously, not only to successfylly carry on the work of the experiment station, but also to further the interests everywhere. Dr. Franklin's duties are dual. First and foremost he is expected to conduct experiments and to inform the growers of the results. Second, he is the superintendent of a cranberry bog and as such has charge of its upkeep and has to pick, pack and market the crop. To this extent the state is in the cranberry business. A certain amount of revenue is derived from the product of the bog each year and this amount, be it greater or less, goes to pay the costs of further investigation.

An experimental bog, to be of full benefit to the owners, should not be conducted as a commercial enterprise. Its continuance should not be dependent upon the revenues received from it. It is impossible to conduct some experiments without running the risk of spoiling a portion of the crop. The fear of this should not prevent the experiments from being made. If anything can be learned from such work the fact that there is a certain risk involved should not be permitted to be considered.

Advantages of Legislative control of apple grading and packing standards.

Sherwood W. Shear,
University of Wisconsin,
January 3, 1916.

I am here to-day to advocate a a national law compelling all growers and packers of apples in closed packages, such as the barrel and the box, to grade, pack, and mark their apples in accord with a standard established by such a law. Such a law should be similar in principle to those laws which have worked successfully on a small scale in 10 of our states, namely, California, Colorado, Utah, Oregon, Washington, Montana, Idaho, Maine, Vermont, and New York; and similar to that law which has proved so successful on a large scale in the Dominion of Canada since 1901, a period of almost 15 years.

These states and Canada have proved that effective and useful laws can be made which will in no way injure honest commercial apple growers, but will benefit not only the growers, but the apple dealers and the consumers of apples.

An effective national law would be similar to that of Canada but, of course, would apply only to apples for interstate and foreign shipment. The Canadian Fruit Inspection law requires that all growers and packers of apples who use closed packages, such as the barrel and the box, must mark each package plainly with the name and postoffice address of the owner at the time of packing, and with the variety of fruit and its grade as it should be classified according to the standard grades (usually 3 in number) as defined in the law. These standards, as defined in the Canadian law, are such that the standard of apples packed in Canada is very high, and yet not so high that the growers have objected to the stringency of the law.

You are without doubt interested in knowing how such a law has helped the growers, in order that you may judge of the benefits which a national law would be to the apple growers of the United States in general, and to the Wisconsin apple growers in particular. Wherever operated these laws have benefited the growers in several important ways. The fact that the profits and sales of the apple growers have increased will be of the greatest interest to you. The growers have also learned by the help of the fruit inspectors to raise and pack better fruit at less cost than previously. Growers have been forced to cooperate for more efficient management in packing and selling. Such a law helps to eliminate consignments to commission men and hence tends to eliminate the glutting of markets, and increases the sale of apples at F. O. B. or delivered prices. Growers have also been enabled to increase storage facilities for their fruit, and also to secure more credit on better terms than they had ever done before. The majority of commercial apple growers, wherever an apple grading law has been enforced, have expressed themselves as heartily in favor of it and have attested its good results.

I have the time only to prove to you briefly how the sales and profits of growers have been increased by such a law.

The Fruit Commissioner of Canada writes that before the apple grading law was passed that "the quantity of fruit which was dishonestly and poorly packed was sufficient to stamp the whole (Canadian) apple industry as unreliable, to the detriment of the honest grower and dealer."

You all know that all good business is permanent and based on confidence existing between the buyer and the seller. Confidence is built on reputation. The reputation of the growers of your country or section of country depends upon the kind of apples you deliver to buyers. The better the reputation of your apples the easier it is to sell the fruit and the easier it is to get better prices for it. The big apple dealers who are honest and pay the best prices for fruit, demand that they know, *not guess*, the quality of the fruit which they buy, in order that there will be no doubt that it will satisfy their customers. Such buyers expect and are willing to pay more for guaranteed fruit than for that of questionable or of unknown reputation. One large dealer writes to an organization located in a section renowned for its excellent and uniformly packed fruit. "We buy of you because we have bought of you *before* and know that your union is a guarantee of excellence and uniformity of pack. We know (not guess) that the output of your union is excellent". There is always competition between buyers for apples of such quality.

Wherever such grade and package laws as I have mentioned have been established, growers have found that the price and sales of their apples increased. Vermont, with an apple crop just about as small as that of Wisconsin has proved the advantage of such a law to its

(Continued on page 5)

Wanted, A Tree Preserver

"There is a business opening in Milwaukee for an intelligent young forester willing to apply his learning to the preservation of local trees. A clientele could readily be assembled among people willing to pay for proper care of their trees. Provided, of course, that he brought credentials from some reputable school of forestry and were certified beyond preadventure as an authority to be trusted.

"Plenty of people with two or three fine trees on their holdings would welcome the chance to employ a permanent caretaker to look after the well-being of those cherished possessions which, once destroyed, cannot be replaced in their pristine beauty in much less than a lifetime. Indeed, it may be doubted whether trees, under the adverse conditions that now prevail—their roots pavement-bound from rain and sun, their tops at the mercy of electric companies vested with plenary powers against all foliage that interferes in the least with trolley or telephone wires, dependent on smoky and vitiated air—could ever attain the same magnificient spread as did the elms, poplars and maples whose youth was passed under more kindly auspices.

"Trees, especially well grown ones, need not so much to be fussed over as to be held under strict supervision. A tree in perfect health requires only occasional pruning and little of that; what it does need is the attendance of a tree doctor on the Chinese plan, whose mission is to keep it in good care and to apply the remedy indicated at the first hint of trouble. His experienced eye should note at once a premature yellowing of the leafage, the ravages of insects or other untoward symptoms, whereupon spraying, cultivation, insecticides, excision of decay with cement filling, or whatever the case demanded, could be gone about without delay."

The above article taken from a Milwaukee daily of late date has points of merit. The right kind of man should certainly be able to make more than a living, he should be able to establish a very profitable business. The trouble lies in finding the right man. There are too many quacks and too few regular practitioners. The tree owners of Milwaukee and other cities need to examine very carefully the credentials of any person whatsoever who pretends to be a "tree surgeon."

Control of Apple Grading.

(Continued from page 4)

fruit growers. The Standard Apple Act of California has increased her grower's profits.

The Commissioner of Agriculture of New York writes, "The grading law (of New York State) has increased the demand for New York State apples by improving the grade and established standards. It has widened the distribution and enabled the crop to be marketed at higher prices. The highest price ever paid for New York apples to the farmers was paid this fall, and this result was due in no small measure to the New York grading law."

The Commissioner of Agriculture of Canada writes, "Undoubtedly the result of our fourteen year's experience with the legislative control of our fruit industry has proven to be a great benefit and has been a means of establishing confidence with the trade, that previously did not exist."

In 1910 the United States consul in Edinburgh records the fact that "Canadian apple imports are gaining a very strong position in Scotch markets, in some cases supplanting the United States supplies. The tendency of the British trade is to favor the Canadian grower and packer, chiefly because Canada exercises a supervision over the grading, packing, and branding of its fruit that is entirely lacking in the American product."

Since the passage of the Canadian Fruit Inspection act, trade journals and brokers who furnish market reports distinguish between Canadian and American apples. Canadian apples are quoted on an average of about fifty cents a barrel higher than American, due largely to the uniform packing and marking.

The majority of large commercial apple growers prefer to pack standard fruit, because this is the simplest and most direct way to secure a perfect understanding between the buyer and the seller. Many careless, ignorant, or dishonest packers, however, unless forced by law, insist upon ruining the reputation of and taking hundreds of dollars out of the pockets of the honest and careful growers of the United States every year.

A compulsory grade and package law for the packing of apples does increase the profits and sales of the growers. Every horticultural organ should therefore, for their own profit and welfare support the enactment of a law establishing a uniform Federal and State standard for grading and packing apples.

Cut off all dead flower stalks. They reduce the vigor of the plant and make the garden unsightly.

Controlling Caterpillars That Attack Catalpa Trees

While our native species of catalpa are comparatively free from insect attack, owners of these trees should watch in the summer and even early fall for the appearance on them of large yellow and black caterpillars. If these feed voraciously on the leaves, they are in all likelihood the larvae of the catalpa sphinx, which commonly are the only ones which feed on catalpa foliage. Unless controlled when present in large numbers, these caterpillars may do considerable injury, sometimes completely stripping the leaves from an entire grove.

The parent of this caterpillar is a large, grayish-brown hawk moth, with heavy body and powerful wings measuring 3 inches from tip to tip. This moth commonly lays its eggs in masses, often of 1,000 eggs, on the under side of the leaves. The young caterpillars are lighter in color than the mature ones, being pale yellow, and have a stout, black horn near the hind end of the body. The prevailing colors of the older caterpillars are yellow and black, and there is a light form as well as a dark one.

Hand Picking And Spraying

Farmers' Bulletin No. 705, "The Catalpa Sphinx," by L. O. Howard and F. H. Chittenden, from which this description is taken, suggests several means of controlling this pest. When only a few small trees are attacked the caterpillars can be picked off by hand, their large size making their detection easy. In the case of tall trees or where caterpillars are very abundant and are attacking entire groves, the entomologists recommend spraying with arsenicals, or better, with a combination of arsenicals and Bordeaux mixture. The proper arsenical spray would be made with either 1 pound of Paris green or 3 pounds of arsenate of lead to 50 gallons of water. When the combined spray is used the same quantity of arsenical should be mixed with 50 gallons of Bordeaux mixture instead of the water. The danger that free arsenic may burn the foliage is lessened and the Bordeaux mixture may control leaf spot and other similar diseases which affect the catalpa. The spray may be applied with a small outfit for young trees or with a large high-power machine such as is used in spraying high trees along city avenues.

Norway Spruce. **Colorado Blue Spruce**
Two excellent evergreens for parks and large lawns. These specimens, on the University Farm lawn were planted in 1890 and are about 35 ft. in height

---

Raspberry Cane Wilt

A New Discovery

We are not at all sure that raspberry cane wilt began in the Garden of Eden but it started so long ago "that the memory of man runneth not to the contrary." Writers on the subject have from time to time described it as due to a sting and let it go at that. Not knowing any better the people accepted the statement as true gospel and repeated it often enough to keep it from being forgotten.

Adjacent to our raspberries we had hundreds of young cherry trees. Each year the cut worms would girdle some of the young shoots close to the limb, so we had cherry twig wilt. An examination of the raspberries showed the cane wilt to be from the same cause. The shoot is girdled where it puts out and wilts quickly, slowly or partially according to whether it is completely or only partially girdled.

G. H. Townsend.

Take cuttings of geranium, coleus and other bedding plants to have in the house this winter. They should be put in sandy soil and kept moist until well rooted.

Cut asparagus tops as soon as dry and burn them; they harbor insects.

Indoor Culture of Hyacinths and Narcissus

Prof. J. G. Moore

Probably no flowering plants are more appreciated during the late winter or early spring months than the so-called Dutch bulbs. Of these bulbs the hyacinths and narcissus are two of the best for indoor culture. While it is a comparatively easy matter to grow these plants successfully, nevertheless a great many meet with failure or only partial success. In this article we shall try to give simple directions as to the best methods for securing good results.

The first factor which must be taken into consideration in the forcing of any bulb is the character of the stock with which we are to start. Inferior bulbs always produce inferior flowers. It is necessary, therefore, if good results are to be obtained, to secure first-class bulbs. This does not necessarily mean that the bulbs must be high priced for the mixed bulbs may be just as good flower producers, and be secured at a much less cost than the named varieties. With hyacinths, however, it is preferable to buy in separate colors as where the bulbs are mixed as to color, unsatisfactory results are likely to occur on account of inharmonious color combinations

In selecting bulbs, care should be exercised to see that they have not become dried out. A bulb which is soft when pressed between the thumb and finger will not give satisfactory results. Another thing to note is the weight of the bulbs in comparison to their size. The heavier the bulb the more likely it will be to produce large numbers of good flowers.

There are two distinct methods of forcing bulbs in the home, i. e., soil culture and water culture.

Soil Culture. Soil culture of these plants is usually much more satisfactory than water culture, particularly for the later blooming sorts. The only objection is the increase in amount of work which is necessary. The soil for the growing of good bulbous plants should be a sandy loam which is comparatively rich. If it is impossible to secure such soil, it can readily be prepared by taking the ordinary garden soil and mixing with it a sufficient amount of sand and leaf mould to make it comparatively light.

The size of the receptacle in which the bulbs are to be grown will depend very largely upon the number which it is desired to have together. Mass effects of three to five bulbs in a single receptacle are usually much more effective and require proportionately less work than where only a single bulb is used. Five to six inch flower pots are sufficiently large to carry the bulbs of the hyacinths and most of the narcissus group. If pots are not available, then pans may be used, but these usually give less satisfactory results on account of poor drainage facilities. In making up a six-inch pot of bulbs, the following is indicative of the procedure: Have the soil well mixed and sufficiently damp so that when the index finger is inserted into the pile, the opening will remain fairly distinct. In the bottom of the pot place pieces of broken pots, charcoal or coarse gravel to provide drainage. In putting in the drainage do not close the opening in the bottom. Have the pieces of pots arched over the opening rather than filling it. With the six inch pots, four or five pieces of drainage, or an inch of charcoal or gravel will be sufficient. Fill the pot about level full of soil without packing. Next take the bulb and with the fingers make an opening into the soil sufficiently large to receive the bulb. Three or four bulbs may be placed in a pot except for large-sized Chinese Sacred Lily. The narcissus should be planted so that just the tip of the neck of the bulb extends above the surface. The hyacinths may be planted in the same way, but are usually planted only to about one-half to three-quarters of their depth in the soil. Settle the soil by jarring the pot. This can be done without exerting other pressure and if there is an insufficient amount of soil after settling, a sufficient amount to fill within one-half to three-quarters of the top of the pot may be added. Do not put in too much soil because over-filled pots are very difficult to water. Do not press the bulbs into the soil. If this is done when the root system begins to develop, the bulbs are very likely to be pushed out of the soil which will necessitate replanting and also check the growth.

The most important period in the production of good flowers from bulbs is that following the planting. This period is one of root development and unless the bulbs make good roots the flowers will be inferior. As soon as the bulbs are planted they should be thoroughly watered and set away in a cool, dark place; a temperature ranging from forty to forty-five degrees being the most desirable. They should be carried at this temperature until a good root system has developed This can easily be determined by placing the hand over the top of the pot, inverting it, tapping lightly on a board or corner of

(Continued on page 14)

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At Geneva Lake

Owing to the very limited time intervening between the summer meeting and "copy" day for this issue of Wisconsin Horticulture no extended account of the summer meeting can be given. Editor Higgins' report clipped from the News appears elsewhere in this number and is most excellent from the standpoint of a newspaper man but it fails to express in any degree the feelings of those who saw for the first time the beauties of Geneva Lake and for the first time realized, perhaps, what wonders can be accomplished by a happy combination of money and brains when applied to landscape gardening. Verily the lily may sometimes be painted to advantage.

Wednesday Aug. 23, was the biggest, best and most perfect day ever experienced by many if not all of our members, at least as concerns sightseeing. Kindly keep in mind always that it was due to the generosity and good will of the Lake Geneva gardeners that we were able to spend such a perfect day.

Summer Meeting

One of the most successful mid-summer meetings ever held by the State Horticultural Society closed with a banquet to 160 people at Hotel Geneva last night.

The meeting was opened at Horticultural hall at ten o'clock Tuesday morning and a very interesting program occupied the members for the rest of the day. Wednesday was given over to entertainment and the members of the State Society as guests of the Gardeners Association, boarded the steamer Harvard and made the tour of the lake, visiting a number of the shore places and taking noon lunch at Fontana.

The first stop was made at Ceylon Court, the home of Mr. J. J. Mitchell, where the beauties of the grounds and gardens brought forth many exclamations of admiration. The Loreli, Mrs. C. Seipp's home was the next stop and here, after viewing the beauties of the place they were entertained with a light lunch by Mrs. Seipp and Mr. and Mrs. Henry Bartholemay. On the north shore a stop was made at Jerseyhurst, the home of Mr. and Mrs. F. T. A. Junkin, to see the Grapery which is certainly a sight worth seeing, then the homes of M. A. Ryerson, Mrs. A. Allerton, A. C. Bartlett, S. B. Chapin, Mrs. N. W. Harris, Edw. F. Swift and Charles L. Hutchinson were visited and the party returned to the city and in automobiles supplied by the Lake Geneva Commercial Club, went to Yerkes Observatory and making the drive around the lake, inspected the state orchard. The trip on the steamer Harvard under the careful piloting of Capt C. A. Johnson, was especially enjoyed.

Wednesday evening at 8:30 o'clock visiting members of the State Society and delegates were guests of the Gardeners Association at a banquet served at Hotel Geneva.

The program of toasts was under the direction of F. M. Higgins as toast master and the responses were short and snappy to a degree.

Each of the visitors who spoke, referred to the marvelous beauty of Lake Geneva and its surroundings and to the thorough manner in which they had been entertained, complimenting the Gardeners Association and Commercial Club upon their mode of welcoming the "stranger within their gates," and voiced their desire to have another one of their summer meetings here in the near future. And as the last strains of Mrs. Eames' song died into hushed silence each one felt that "They had found at the close of a perfect day the soul of a friend they'd made."—Lake Geneva News.

Practice seed-selection for tomatoes and beans as you do for corn.

Every Reader May Have One Guess

While browsing thru my desk recently I dug up a letter dated March 27th, 1906 which was sent me by the Editor of a very well known agricultural paper. On the top of the sheet is penciled the following: "Dear Mr. Cranefield, What about this, is he crazy?" It really did not seem worth while to print such letter to say nothing of an answer to it and so it has lain ten years in the bottom of the drawer. During these ten years I have received not less than one hundred "crank" letters similar to this one many of them plainly the product of a diseased brain but many more simply hobby riders. Which is this? Only one guess.

F. C.

The Wisconsin Agriculturist
Dear Sir

I write to You concerning Experment that I know that is all right and I would like to have It advertised In order to help all farmers it willnot cost them much to try I have twenty Six hundred apple trees planted three year old and I can pick out Seeds out of a core of anapple that will reproduce the same kind of fruit without grafting now it will be quite a few Years before mine Will fruit. So that I can prove up to the public now if you wish to put a piece In Your paper that if parties wishes to try to raise Some of the seedlings the Same as I am Doing if they will Send me cores as many as they wish all Expences payed Such as postage I will Send back the seeds and they Shall plant them and when they prove up as I have mentioned and they are Satisfied what can be Done they can send me what they think is fare for my trouble now I am Doing that in order So my business will get the farmers Inlighten to geting Into Some trees that willnot be a Dieing off In a few years before there Seeds will prove up mine will and I can Show the public what will be a great benefit to the public You need not put the writing or printing in right a way only when you are not crowded in Your cooloms Next fall when apples is plenty So farmers can get plenty of apples So they Can Send coies

Yours,

Picking the Winner

The Manitowoc County Horticultural society held their first annual picnic at the farm of W. J. Ahrens, north of the city, yesterday afternoon, the meeting being attended by about a hundred and fifty members. Lunch was served at noon, coffee, cream and lemonade being furnished on the grounds, while the picnickers brought their own baskets.

N. A. Rasmussen, of Oshkosh, president of the State Horticultural society, delivered an address in the afternoon, touching upon various common difficulties which confront the grower.

A contest was held, the object being to decide upon the best pruned tree in the Ahrens orchard, which is one of the finest in the neighborhood. Mrs. Carl Kiel won first place and Miss Alma Jacobson picked the second best.

The affair was the first of its kind to be held in the county, and the members of the society plan to make it an annual event.

If onions have stopped growing, pull them and lay them on the ground to ripen. When the tops are dry twist them off and store the bulbs.

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are particular seeds for particular planters. Send for Market Gardener's Book.

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

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Fall Planting

C. J. Telfer, Ft. Atkinson

The question has been asked several times whether it is advisable and profitable to do fall planting. Shrubs and some of the small bush fruits such as currants and gooseberries do very well when planted in the fall, but they should be planted as soon as it is possible to move them, which is usually soon after a good killing frost. This gives them time enough to send out little rootlets which gather enough moisture to supply the evaporation from the tops. Great care should be taken to firm the dirt well around the roots and then mulch with well rotted stable manure, using enough to cover the ground to a depth of two or three inches.

The one great trouble in planting shade or fruit trees in the fall is that they do not send out enough rootlets to gather the amount of moisture necessary to balance the evaporation and consequently the drain is so heavy on the tree that it does not often start in the spring and if it does may die soon after starting.

Peonies and a great many other perennials may be planted in the fall but should be well protected through the winter.

Strawberries can be planted with success but the question arises as to whether it pays, as the nurserymen charge twice as much for plants sent in the fall. Strawberry beds must be planted one year before bearing and beds planted in the spring and given good care will make a good solid bed of plants before the next fall, therefore nothing is gained by planting the year before.

Transplant iris now.

Wine Not?

It may be of interest to growers of grapes to know if they are not able to dispose of their crop in the regular market, either because of an over-supply or by reason of injury to the fruit by heavy frost, that the loss may be materially reduced by making the grapes into wine.

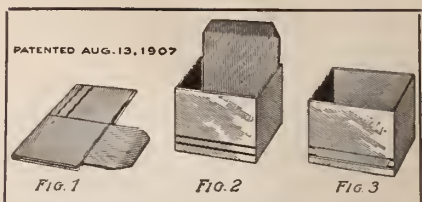
Wine so made may be sold without payment of a government tax if the regulations prescribed by the law which is given below are observed.

Sec. 3246, U. S. Statutes (as amended by sec. 5, act of Mar. 1, 1879 (20 Stat., 327). Nothing in this chapter shall be construed to impose a special tax upon vintners who sell wine of their own growth, or manufacturers who sell wine produced from grapes grown by others, at the place where the same is made or at the general business office of such vintner or manufacturer: Provided, That no vintner or manufacturer shall have more than one office for the sale of such wine that shall be exempt from special tax under this act; nor shall any special tax be imposed upon apothecaries as to wines or spirituous liquors which they use exclusively in the preparation or making-up of medicines.

(Treasury Decision 19410, 1898.) Where grapes are pressed at one place and the juice is then carried to another place and there fermented, the latter is the place of manufacture of the wine, and the manufacturer is there permitted by the provisions of section 3246 to sell it without paying special tax.

H. H. Morgan, Madison, Wis.

Plant spinach in August or early September for fall and early spring use.



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Dept. D, Cumberland Wis.

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W. T. Snyder,
Tomah, Wis.

Keep the fallen fruit picked up. "Falls" usually contain grubs of insects, and by killing these next year's crop dangers will be lessened.

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The Kickapoo Development Co.
Gays Mills, Wis.

Caution to Prospective Drug Growers.

(Continued from page 1)

drug specialists point out, however, that prices of these articles prevailing under the present disturbed conditions are abnormal and therefore should not be regarded as a safe basis on which to estimate regular returns from such activities.

The Busy Housewife and Her Garden

J. V. Beyer

There are any number of housekeepers who like raspberries for canning, but on account of the wild way they have of growing together at the time of ripening makes a lot of trouble picking them, as it is unavoidable to come in contact with their thorns, and therefore most women after one trial discard them.

Here is a way to avoid this annoyance: In the spring when the old canes are broken out, select a number of young shoots, say four or five take a binder twine and tie them together three times (nearly solid, not loosely) once near the ground, once in the middle and once about 4 to 6 inches from the top. The bush being tied in this way, the growth will hinder the sun from forming any buds on the inside and you will find your berries all around on the outside. Not alone will the picking be easier for you can walk all around and do not have to trust your hands inside, but the work of cultivation will also be lightened as you can hoe or cultivate clear under each bush.

(Editor's note: While this method may be satisfactory for the amateur the market grower could scarcely afford to lose all the fruiting wood except that on the outside of the outside canes.)

The pithy, pointed and timely little notes on flowers and home decorations tucked away in odd corners of this and past issues are written by Prof. Le Roy Cady of the Minnesota Agricultural College.

Orchard Winter Injuries

Winter injuries to fruit trees may be attributed to various causes but their extent is more largely determined in the system of soil management than probably any other factor. Owing to the prevailing rigorous climate conditions, methods for lessening the injury in its various forms must necessarily have become of vital importance to growers in this and neighboring states with similar conditions. The subject has been studied in its various phases and practical methods for control have been attempted in Wisconsin, Iowa and Minnesota since at least 1870 or earlier. We have thus from time to time heard more or less about hardier varieties that are better adapted, of certain cover crops to be used under certain conditions, of own-rooted and hardy-rooted scions in nursery stock—but not enough of the proper method of soil management. The grower may be dependent on others in the securing of his nursery stock, but the care of the stock is within his control and upon his methods will depend the success of the orchard in the harvest. He should thus become familiar with this problem of winter injuries—and there are many forms of them, and recognize their cause and means of prevention.

We frequently hear of blights and disease in trees that are directly traceable to the effects of a hard summer drouth followed by severe winters and winter killing of the trees. In Wisconsin we usually have dry summers with a long, moist autumn when such injury is most prevalent. Under such conditions conducive to little vigor in growth—a prolonged growing season and wood imperfectly matured, with severe winters and high, drying winds—even the hardier varieties require the best cultural treatment to come through unharmed.

Winter injuries may be classed for convenience under four main divisions according to the parts of the tree affected as—buds, roots, wood and bark.

Bud injury is chiefly to the fruit buds, caused by extremes of cold, by permature growth induced during winter warm spells and followed by sudden drops in temperature. The effects may be similar to spring frost injury when the whole or part of the crop may be killed, and fruit only slightly injured may even develop in an abnormal or deformed condition. Thus fruits are found on trees with otherwise perfect fruits occasionally seedless and at times coreless.

Root injury occurs usually in very wet soils or where there is no ground cover of vegetation or snow to prevent drying out and deep freezing as on bare hillsides. The trees will at times leaf out in the spring and try to develop their foliage, but, being unable to supply sufficient moisture as the weather grows warmer the leaves gradually die off.

Injury to the wood occurs more or less every season and, evidenced in a darkening in the sapwood, is often difficult to distinguish from the ripening of the sapwood to form heartwood. In severe cases, however, the darkening clear to the bark may be readily distinguished in cutting across the injured limb. Such injury is especially noticed where the wood has been poorly matured. If in nursery stock, the trees may frequently be saved by cutting back to the snowline where the wood is apt to be normal.

Winter injury to the bark usually kills the cambium or growing region in the outer wood and is familiar to us under the types, which we often indefinitely term as Sunscald, Crownrot and Cankers.

Sunscald is shown chiefly in the blistering of the trunks of young trees and scaffold branches as well on larger trees, mainly on the sunny side with characteristic numerous dead and blistered areas. It may frequently be caused by imperfect foliage protection or by the reflection of intense sunlight in winter from the snow surface. Its most usual cause however probably lies in the stimulation to winter sapflow on the sunny side in warm weather with a subsequent rapid freezing of the tissues. The occurrence is found greater where the trees are less protected from sudden changes in air and soil temperatures. An adequate ground cover combined with whitewashing the exposed branches and trunks will usually effectually prevent such injury.

Crown-rot is more prevalent where the union between stock and scion in grafting is not perfect, and thus is to be looked for rather in younger trees. The tissue is more readily affected by severe weather conditions and the entrance of the rot-producing organisms is made doubly easy. As a prevention all nursery stock should be examined well before planting.

Collar-rot and Crotch Cankers are more frequently found, occurring at the base of the trunk and at the junctures with the main limbs. At these parts it is known that the period of growth is continued longer than in the rest of the tree, the wood being less apt to be fully matured and thus more readily injured. The form is easily recognized in its

location and the more or less extensive areas irregular in outline and frequently aggravated by the attacks of disease spores or insects, especially the plant lice. In young trees, perpendicular cracks may run up from the ground line and become so serious as to girdle the tree in the spring growth. Bridge grafting may be resorted to with uncertain results, and the trees are best replaced in severe cases. Snow or other ground covers will usually prevent the occurrence of such injuries.

The Cankers, though due to a possibly wider range of causes, also resemble Collar-rot in being started chiefly by winter injury. The aerial parts of the tree may be injured in many cases where the roots and crown are but little affected. Various theories have been advanced as to the cause, such as: Tensions in wood of vigorous growth which is exposed to high, drying winds, or to strains at the crotches with drying out of tissue and consequent cracking under tension. More recent observations at the Missouri Station conducted by Dr. Whitten have shown a great absorption of heat on the south side of the tree in sunlight with extreme drops in temperature at sundown. From his Records of temperature drops from 70 degrees (Fah.) to atmospheric 30 degrees within very short intervals at sundown, his explanation seems well-founded, especially where the wood is immature.

Hardiness in a plant may be considered essentially as its ability to withstand unfavorable environmental conditions, especially as regards temperature. This is largely determined in the species and the variety of plant but it may be materially affected by those influences which bear directly upon the maturity of the wood. Recent observations indicate that there is a state of rest in the early period of dormancy during which trees will not in general be affected and this period is much longer in the case of properly matured trees. Alternate freezing and thawing with excessive drying tend to break this rest period with its resultant liability to injury. If then we can increase the moisture holding capacity of the soil, maintain a more uniform soil temperature and aid materially in lessening changes in such conditions, along with an increased maturity of the wood, we can largely prevent an early break in the rest period and thus increase the hardiness of the tree.

In our cultural methods for preventing or lessening these forms of injury we may now understand the conditions that will reduce them to a minimum. As we have seen in nearly every case of injury, the maturity of the wood has played a most important part and our methods should be directed to securing this primarily. We must further provide a protection to the roots in a ground cover, which will prevent deep freezing and dessication as well as retard growth in the spring or during unseasonable warm spells. The

(Continued on page 15)

Let George Do It

Or Paul or Howard or even Gladys. Any boy or girl can get one or more new members without going far from home.

A Cash Offer

During September only a cash bonus of twenty-five cents will be allowed for each new member secured.

Collect 50c for each membership, send twenty-five to this office and retain balance.

Let the Young Folks Do It.

No renewals. No postage stamps. Send for sample copies, coin cards and self-addressed envelopes.

F. Cranefield, Sec.

SALESMEN WANTED!

We are in want of a few reliable, energetic men to act as agents for the sale of our Northern Grown Trees, Shrubs and Vines from our Nursery. Previous experience not essential; live active men can earn good wages. For our terms address, giving full name, age and reference.

GREAT NORTHERN NURSERY CO.

Baraboo, Wis.

Indoor Culture of Hyacinths and Narcissus.
(Continued from page 7)

the table and removing the earth ball. If the exterior of the earth ball is covered with roots, then the plant has developed sufficiently to be brought in for flower production.

If the proper temperature has been maintained there will be little or no trouble from top growth. If the tops do begin to grow it is not necessary to bring them into the light at once. Tops having considerable extent, which will be white when grown in the dark, will turn their proper color in two or three days after bringing into the light. During the period in which the roots are developing, little water is necessary. Just enough should be given to keep the soil well moistened. It will probably not be necessary to water them more than once a week, and frequently not so often. As soon as the roots have developed the plants may be brought in for forcing. It is well if a number of plants are being grown to bring them in at intervals as this will provide a succession of flowers.

The bulbs should not be brought from the low storage temperatures into the high temperature of a living room in one change. It is better to bring them into high temperatures gradually. Very frequently the buds are blasted by giving too high a temperature. A bulb does not need high temperature, sixty to sixty-five degrees being sufficient and the flowers will last much longer than if higher temperatures are given. The higher temperatures, seventy to seventy-five degrees, give quicker results, but with danger of blasting the buds. The bulb needs little care after being brought into the light save in the matter of water. Water copiously at long intervals giving water only when the soil indicates that there is a lack of moisture.

Hyacinths may be forced for more than one year, but the narcissus are usually so weakened that it is advisable to throw away the bulbs or to plant them out of doors and buy new ones for forcing the following season. If the bulbs are to be carried over, the leaves should be allowed to remain on the plants after the flowers are off. Remove the flower stalks as soon as the flowers are wilted, then set in the light in a temperature of about sixty to sixty-five degrees, and allow the plant to continue its growth until matured. After the leaves have wilted of their own accord, they may be removed, the bulb taken out and stored during the summer.

Water Culture. Water culture does not materially differ from soil culture save in the medium in which the plants are grown. There are various methods of water culture, the most common being that in which the bowl or hyacinth glass is used. The bowl is preferable for forcing narcissus as it is possible to grow a larger number thereby getting a better effect. However, with the hyacinth a single bulb in a hyacinth glass is very satisfactory. In the bowl culture take a shallow bowl preferably about three to four inches deep. In the bottom of this put one-half inch of granulated charcoal. The purpose of the charcoal is to keep the water "sweet." On this may be placed a shallow layer of one inch of gravel or sand, gravel being preferable. The bulbs are then placed on this material and the dish filled with pebbles or coarse gravel. The object of this is to keep the plants upright. Put in sufficient water so that it just touches the bottoms of the bulbs. The dish may then be set away and carried the same as for soil culture. The time required for developing, however, will not be so great. Three-fourths of the failures in water culture of narcissus and hyacinths is in trying to carry the plants at too high a temperature. Do not bring in the bulbs and place them in the warmest and brightest portions of the room. There should be plenty of light, but the temperature should be kept low, otherwise there will be a very excessive vegetative growth and few blossoms, very frequently the buds blasting and no blossoms being secured.

Kinds for Forcing. One of the chief bulbs for forcing is the so-called Chinese Sacred Lily. This is an early flowering narcissus. It has the largest bulb of the narcissus group, and each bulb produces a number of flower stalks. It is well adapted for either pot or water culture. Probably the best white narcissus is the Paper White. These two kinds usually give a sufficient number of early flowers. They can then be followed by the Pseudo-narcissus which are more often known as daffodils. Two varieties of daffodils which stand out among the finest for forcing is the Von Sion which is a large, double yellow trumpet, and the Emperor which is a large single trumpet. Of the cup daffodils the Incomparabilis floriplena is one of the best. All of these are adapted to both pot and water culture.

Hyacinths. Some of the best named varieties for both water and soil culture are: white, Mount Blanc and L. Grandesse; pink, Lord Macauley, Von Schiller and Robert Steiger; blue, Charles Dickens, Grand Lilas and Mimosa.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

Orchard Winter Injuries.

(Continued from page 13)

planting of windbreaks may be of some importance, though it is usually of secondary value.

If we briefly review the systems of soil management most prominently advocated in recent years, we find only two of more than general interest. The Definite Mulch and the Tillage-Cover Crop systems with their intermediate variations for special conditions are of greatest promise.

The Definite Mulch System, as outlined by Professor Stewart of the Pennsylvania Station, consists essentially in maintaining sufficient mulch material over the root-feeding area in a sod orchard to prevent sod growth that would compete with the tree roots for plant foods in the soil. For this system great advantages in moisture conservation, fruit size and color, vigor of growth and longer growing season are claimed, and with probably good foundation. It covers our cultural-preventive requirements very well except in one particular—that of wood maturity—for the prolongation of the growing season is very apt to result disastrously in a climate such as this.

In our Tillage-Cover Crop System on the other hand we can secure definite permanent results in tree vigor and size of fruit, with possibly a slight deficiency as to color. But in this system we can practically control the length of the growing season and thus the maturity of the wood as well as secure adequate cover protection in most instances. The practice is now no doubt familiar to most of our growers, it being followed by at least 75% of the larger commercial orchardists under various climatic conditions throughout the country. The method of thorough early summer cultivation, sowing of a cover crop by the last of July and spring plowing is thus evidently most generally advisable for this State and it becomes more a question of which is the best cover crop to be used under given conditions. This the grower must largely determine for himself by a comparison of their various qualities and the special needs of his orchard. In the intelligent following of such a system the problem of winter injuries in orchards will soon become of much less importance.

J. E. Richardson, Jr.
University of Wisconsin.
January, 1916.

Keep suckers off fruit trees and vegetables, they take the strength of the plant and retard the development of the fruit.

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

An Appeal to Members of The W. S. H. S.

Attend the State Fair in Milwaukee, Sept. 11 to 16th. and urge your friends to attend.

The management of this Society works hand in hand at all times with the management of the State Fair.

We spend hundreds of dollars of our funds each year to make a bigger and better Fair and to advertise Wisconsin fruit.

We believe firmly in the Fair. We believe in Hon. C. P. Norgord, Com. of Agr. who is devoting all his energies and splendid abilities to make the State Fair a great educational institution worthy of the support of every one in the state.

We believe in Secretary Remy and his assistants and the Advisory Board.

We believe in our worthy president N. A. Rasmussen, who is Superintendent of Horticulture.

This Society through its officers has pledged its support to the State Fair and we call on you as loyal members to help us "make good." You can do it by meeting us face to face at the W. S. H. S. Exhibit in the Horticultural building.

Officers and Executive Committee.

By F. Cranefield, Secretary.

See the W. S. H. S. Exhibit at the State Fair.

A Book of Verses underneath the Bough,
A Jug of Wine, a Loaf of Bread—and Thou
Beside me singing in the wilderness—
Oh, Wilderness were Paradise enow!

I sent my Soul through the Invisible,
Some letter of that After-life to spell:
And by and by my Soul return'd to me,
And answer'd, "I Myself am Heav'n and Hell;"

Orchard and Garden

The second crop of everbearing strawberries is now beginning to ripen.

Cultivate the strawberries and do not allow the runners to become too thick.

If red spiders appear on evergrees, spray frequently with a good insecticide.

Order bulbs now. They reach this country in September and should be potted in October.

Watch for two-legged marauders in the melon patch. It may be necessary to sit up nights but it pays.

As soon as a vegetable crop is all gathered, clear the ground and plant to clover. It keeps down weeds and can be turned under in the spring, enriching the soil.

If blight appears in the orchard, cut out and burn all affected branches. If scab or codling moth is severe, spray with concentrated lime sulphur, 1 to 40, and arsenate of lead, 3 pounds to 50 gallons of water.

Spray lilac bushes with potassium sulfide—one ounce to two gallons of water—to remove mildew.—University Farm, St. Paul

SUPPLEMENT
Wisconsin Horticulture

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PACKING APPLES IN BARRELS

J. A. HARLEY, Madison

The purpose of this supplement is to furnish the beginner with a brief guide to the principles and practices of the up-to-date grower and shipper of commercial apples.

Probably the marketing of no form of farm produce has undergone a greater revolution during the past 20 years than the marketing of fruit. After experimenting with every conceivable method, the sentiment became pretty general that certain definite standards should be set up and maintained for the good of the business. Later, the demands of the fruit growers found expression in legislation, state by state. Finally, the National government took action and gave the country the "Sulzer Bill," a law for the improvement of the packing and marketing of apples.

The Sulzer Law

This law clearly defines what constitutes (a) standard quality of apples, (b) standard grades for packing apples, (c) standard barrels, and (d) provides that when "standard apples" shall have been packed in "standard barrels," the grower may use certain "U. S. brands" to designate his "standard grades."

A severe penalty is provided for the deceptive use of the government brands.

Standard Apples

The standard quality of apples as provided in the Sulzer Bill is: Apples of one variety, well grown specimens, hand picked, of good color for the variety, of normal shape, practically free from insect or fungus injury, bruises and other defects, shall be the standard quality.

An allowance of 10 per cent leeway is made to any grower in packing this quality.

Standard Grades

Apples of the above *standard quality* may be packed according to size into three grades:

Grade I. Apples from $2\frac{1}{2}$ inches up.

Grade II. Apples from $2\frac{1}{4}$ inches up.

Grade III. Apples from 2 inches up.

It should be carefully noted that the Sulzer Law provides for only *one* grade as to *quality* of apples but *three* grades as to *size*.

Standard Barrels

A standard barrel is one whose staves are $28\frac{1}{2}$ inches long, diameter of head $17\frac{1}{2}$ inches, distance between heads 26 inches outside circumference of bulge 64 inches, and volume 7056 cubic inches. Such a barrel holds approximately three bushels.

Standard Brands

Standard quality apples, packed according to standard grades, in standard barrels may be branded according to grades as follows:

Standard Grade No. 1, Minimum Size $2\frac{1}{2}$ inches.

Standard Grade No. II, Minimum Size $2\frac{1}{4}$ inches.

Standard Grade, No. III, Minimum Size 2 inches.

Standardization Spreading.

The chief provisions of the Sulzer bill, with modifications to meet local conditions, are in operation in nearly all of the apple producing states. Wherever high standards of packing and shipping are maintained the results are most beneficial. Only apples of quality find their way to market; the demand for them becomes stronger, and the prices correspondingly higher. The consumer grows confident and buys his apples thereafter upon the reputation of the brand.

Kinds of Containers.

During the past decade great improvement has been made in the methods of packing and marketing fruit. Growers have experimented with this form and that in the hope of discovering the best container for their produce.

There is no "best," no one form superior to all others for all varieties, all markets, and all conditions of fruit. In selecting the proper container for his apples, the grower, or packer, must be governed by circumstances: by the variety; their shipping quality; by the season and the demands of the trade; by the cost of packing and cost of transportation. His object in packing is to obtain for his

crop the highest market price; and in determining the price, the kind of container used plays a very important part.

The most popular containers for apples are the "standard box," bushel basket, hamper, crate and "standard barrel."

Whatever the form of container certain requirements always apply:

Appearance, so attractive as to "make the mouth water" and create a desire to buy.

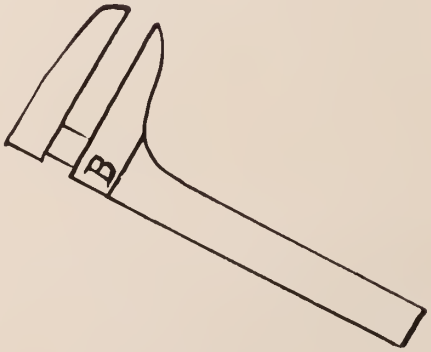
Cleanliness, free from dirt, stains, and foreign substances.

Uniformity, so far as possible fruit uniform in size and color.

Honesty, this will include all the other requirements and exclude all objectionable practices.

Temporary Shelter

Since a large part of the apple crop is barreled in the orchard, some kind of temporary shelter should be provided for use in inclement weather. Either a



tent or shed should be in readiness so that in case of a storm the work may go on uninterrupted. The temporary shed will also serve as a convenient place for storing barrels.

The Packer's Tools.

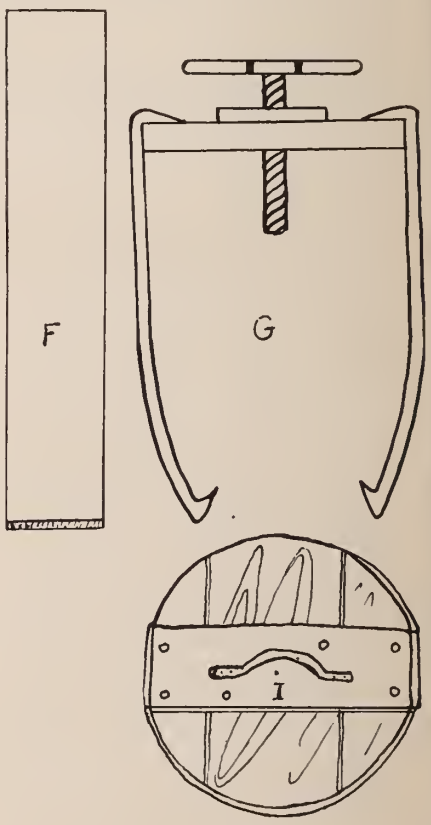
A workman is known by his tools. Much delay and vexation of spirit will be saved the packer, if he is provided with the proper tools. See cuts.

'A' is the packer's indispensable tool. There is no substitute for this hatchet.

'B' is a small caliper rule convenient for measuring apples.

'C' is a side-cutting wire nipper for use in stemming apples.

'D' is a series of rings for grading apples, sizes 1¾ to 3.



'E' (p. 3) is a gauge board, very convenient for the beginner in grading.

'F' is a racking board, made of plank four feet long.

'G' is a barrel press, known as the screw press type.

'H' (p. 4) is an iron circle press head, considered better than the wooden type.

'I' is a follower, used in tailing up the barrel.

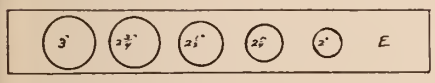
The grower will, of course, provide as many duplicate sets of tools as his work demands,

consistent with economy of time and effort. Some of the tools can be made at home, the others obtained from any dealer in orchard supplies.

The Packing Bench.

There are several types of packing benches. One, in very general use resembles a feed trough with a slat bottom. The railing is padded and sometimes a canvas is thrown over the slats to prevent bruising the apples. Such a table can be used by two packers, one on either side.

A better type for a single packer is shown in the illustration below. Its dimensions are six feet in length, four feet wide



at the head and 18 inches at the foot. The rail is made of 1x6 inch board, padded. At the foot, or mouth, is tacked an apron about five feet long. The legs for the head are made 45 inches long; for the foot 39 inches, giving the table a six inch pitch towards the packer. The floor is made of 1x1 slats.

No baskets are required for grading with this bench; the apron serves the purpose. Upon such a bench four or five orchard crates may be emptied at a time. An occasional jar keeps the apples rolling towards the packer.

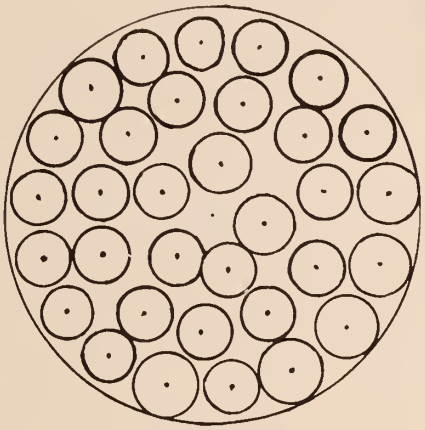
Picking Apples

Since the proper packing of apples really begins with the picking of them, a few words here will not be amiss.

The picker's tools consist of a canvas bag, a step ladder and a pair of rubber soled shoes.

The canvas picking bag is recommended because it is suspended from the shoulders of the picker and, consequently, leaves both of his hands free for picking; nor can it be knocked off the ladder, as often happens with a pail or basket.

The best form of step ladder is the kind with flaring legs and narrow top. The back support consists of a single pole. Such a



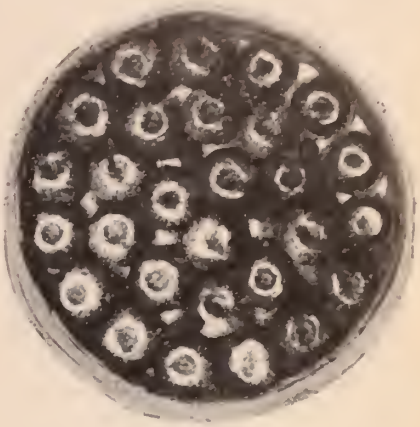
Model Face

ladder does not easily tip over and can be easily thrust among the branches.

When boys are employed to pick and are allowed to climb the trees, they should be required to wear rubber soled shoes, so as not to bruise the limbs. They should be duly instructed how to pick the apples without pulling out the stems. The trick is done by grasping the apple firmly and giving it a quick pull accompanied with a turn of the wrist.

Orchard Crates.

The use of barrels in the orchard for hauling apples from the trees to the packing house should be discouraged. The apples are apt to become bruised and the barrels soiled, rendering them unfit for market use. Instead of barrels, use bushel crates, such as are commonly used for marketing tomatoes. The crates are light, of convenient size, and stack compactly on the truck. A $1\frac{1}{2}$ inch slat should be nailed across each end of the crate, on top, so that the



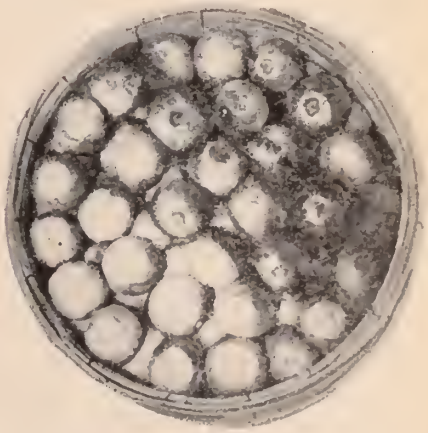
Barrel Properly Faced

apples in the lower crates will not be bruised by the upper crates resting upon them.

Grading Apples.

Until an economical and efficient grading machine has been invented, the bulk of barrel apples will continue to be graded by hand.

In many large orchards the pickers are instructed to leave all of the cull apples on the ground where they may be gathered up later for the cider



Barrel Properly Tailed

mill. This arrangement obviates the necessity of twice handling the culls, and it enables the packer to devote all of his atten-

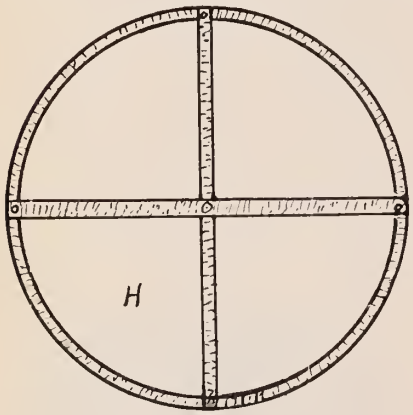
tion, unhampered, to the work of grading and packing.

The experienced packer grades by sight, occasionally applying the caliper or rings to test his grades. For the novice, the gauge board will be most convenient. With a little experience he will learn to do his work very rapidly.

From his position at the foot of the packing bench, the packer scrutinizes every apple, as it rolls towards him, both to discover any blemishes and determine its grade. Standing between two barrels, he fills the apron, with No. I or No. II as the case may be, and then lowers and empties it into the proper barrel.

All Ready

Too much emphasis cannot be laid upon thoro preparation for the packing season. Everything



Iron Circle Press Head

must be in readiness before the work starts. There must be on hand a sufficient number of tools, boxes, barrels, crates, benches, ladders, etc., if the grower is going to make the most economical use of his time and workmen. To fail to make proper preparation is unbusinesslike and expensive. It may mean the difference between success and failure, between profit and loss on the apple crop.

Making Ready the Barrel

Apple barrels are shipped from the cooperage with both heads in unnailed. By use of the hatchet, remove one head. The remaining head becomes the "face" end of the barrel.

Next drive down the quarter hoops and nail them each with four nails driven slanting towards the head. Clinch the nails *smooth*. At the same time nail in the head with six or eight nails. Next nail on the head liners, set at right angles to the

cracks and catching all the boards in the head. Drive the nails slanting into the second hoop. From four to six nails will be sufficient.

Caution: examine the barrel outside and in to make sure that no nails project.

If paper heads are used, one should be laid in the bottom of the barrel at this time. If preferred, the stenciling may be done before the barrels are packed. If deferred, the name of the variety, grade and packers number should be penciled on the barrel, in small letters, near the chine. This will prevent mistakes later.

Making a Face

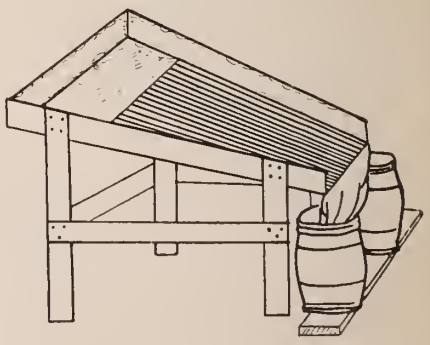
Having acquainted himself with what constitutes "standard apples" and having provided himself with "standard barrels," the packer will proceed to pack his apples according to "standard grades."

Place a racking plank on either side of the foot of the packing bench and place a barrel upon each. One barrel is for No. I apples, the other for No. II. Always place the barrels in the same relative positions, No. I on the left and No. II on the right.

Next select the apples for the face. They should be, as far as possible uniform in size and color, and fairly representative of the contents of the barrel. If there is variation in size, the smaller apples should form the outer circle of the face.

By use of the wire nippers, nip short all of the stems on the face apples.

Begin facing by laying the outer circle first, stems downward. Ordinarily there will be 15 or 16 apples in the outer circle, 10 or 11 in the second, and three or four, as the case may be in the center. See cuts. In no case, finish the center with one large or one small apple.



Packing Bench

The object in facing is to give the barrel a neat, attractive appearance when opened. This cannot be done unless the apples are approximately uniform in size and color.

In laying each circle in the face, experience will soon teach

the beginner how, by turning his apples to a longer or shorter diameter, his circles will come out just right.

Having finished each circle of the face and wedged the center, the packer will next cover the interstices of the face with a second layer so placed as to show the color of the apples in the second layer when the barrel is opened.

Filling

Lower and empty the apron gently—as gently as though filled with eggs—into the barrel. As the apples roll out, scrutinize them closely for any defects that may have escaped previous notice. This is the packer's third and last time to inspect the apples. The picker has previ-

No 23 FIELD OR STORAGE CRATE
Holds Full Bushel

ously inspected them twice. If they are competent, rarely will a defective apple find its way into the barrel.

After each apron of apples has been emptied, seize the barrel by the top and give it two or three sharp jars. This will settle the apples into their most compact form. The process is called "racking" the barrel and should be repeated after every apron full has been emptied. Avoid severe *shaking* and always rack the barrel upon the racking plank, not on the ground.

Tailing

As facing is the foundation to a good barrel, so tailing is the cap stone. It is the last test of a good packer. As much injury may result from too tight packing as from too loose. The aim should be to get the pressure just right. Rules avail little; the packer's surest guides will be his experience and good judgment. He must know his apples, the variety, size, degree of ripeness, and, probable shrinkage, in order to tail the barrel properly.

The apples for the tail should be stemmed, same as for the face. The process requires but a moment with the nippers. Unless the apples are stemmed, there are sure to be some stem bruises, resulting in decay and shrinkage. With long stem varieties, stemming is indispensable.

If the processes of filling and racking have been properly done, the last two or three layers need be so arranged as to project only level with the chine. The "follower" should be applied once or twice and the barrel racked to settle the apples evenly. The trick is done by grasping the barrel with the arms across the top and pressing down the follower with the elbows as the barrel is racked. Just how much room the packer must leave for the last layer, his own judgment must determine.

The best packers finish the tail stems up. Others prefer the calyx end. See cuts. In either case, the apples should be as level as possible so that when the head is pressed down the pressure may be evenly distributed. If one or two project above the rest, they are sure to be bruised. The result will be decayed fruit and a slack barrel.

The skill of the packer is shown in the tailing. The beginner should practice the process diligently, opening a barrel occasionally to test his pack and examine the condition of the apples.

Nailing

By means of the barrel press, press the head into the croze and nail it with six nails, eight nails, if a three piece head. Use 1¼ inch wire nails.

Nail on the liners as per face end of the barrel, using six nails, taking care to so place the liners as to catch the ends of all boards securely. If perchance a nail should protrude, withdraw it at once and drive another. Under no circumstances leave a nail point projecting. It is sure to catch some poor fellow's hand, in handling, and tear it seriously.

Stenciling

Having nailed up the barrel properly, it should be inverted. This will bring the face on top, in readiness for stenciling.

One should be particular about his stencil, in order to have it neat and attractive. For this work use a stiff stencil brush and a good quality of stencil ink. A sponge kept in the ink can will keep the brush properly moistened for use. Set the straight lines of the stencil parallel with the cracks in the head.

Apple Brands

The style of brand should be chosen with great care. Once chosen, it becomes the grower's trade mark and his reputation as a grower and packer of good apples will be known and judged by his brand. For this reason, and to prevent false claims, the grower should register his brand and protect it as he does his own good name.

A good style of brand should contain five items: The brand name; the grower's name, address, variety and grade of apples See below.

Information Cards

For the information of the consumer and the instruction of the housewife, many growers have adopted the practice of inclosing in the head of the barrel a card similar to the following. Such a card should give the name of the variety, grade, probable season, and use.

No. 25

This barrel contains No. I Tolman Sweets. Season, Dec. to Feb. Excellent for baking. Require long baking in moderateheat. Keep in temperature near 32° but not below. Should there be any inperfections return this card with particulars to THE SMITH, JONES & BROWN CO., High Land, Wis.

The Last Step

Rain and sunshine are essential for the growing of apples but they are very bad for packed apples. As fast as the barrels are packed they should be carted to the ware house or storage. The sooner they are gotten into a cool even temperature, the better for apples and barrels. Under no circumstances, leave the barrels exposed to sun or rain; the grower is sure to pay dearly for his carelessness when the apples arrive in market.

Pointers

1. Have everything in readiness. Plan your work and then work your plan.

2. "Handle with care" is a good motto to follow always in handling apples.

3. The wise man will order his barrels early. They should be kept in a cool shady place until needed.

4. In as much as the packer is handling an article of food, he should take care that his hands are clean and every apple as clean as can be.

5. Avoid the fly nuisance. Trap the flies. Keep packing shed clean.

6. Before beginning to pack, make sure there are no nails projecting outside or in. Otherwise, you may feel the point of this admonition.

7. The iron heading block is to be preferred to the wooden.

8. In nailing on the liners, make sure that the ends of all boards in the head are caught by each liner. Six nails will be sufficient.

9. Use a 16 stave barrel. It is hardly necessary to add that second hand barrels should never be used for shipping apples to market.

10. All barrels should be removed from the orchard as rapidly as packed and stored in a cool place. Under no circumstances allow the packed barrels to stand in the sun or rain.

11. It will seldom be found profitable to pack apples under grade No. 2. Small apples are best made into cider.

12. These instructions are of little use to the grower whose apples are not of *standard quality*. He is wasting time and effort in following them.

13. Practice the fine points of packing; they determine the difference between a good pack and a poor one.

APPENDIX

The following tables are appended for what they are worth. Local conditions will necessarily govern prices of material and labor, but in general the tables are approximately correct.

COMPARATIVE COST OF BARREL AND BOX PACKING

Barrel		Box	
Barrel	$ .25 to $ .40	Box	$ .10 to $ .15
Paper heads	.05	Paper	.06
Packing	.10	Packing	.06
Nailing	.01	Box-making	.01
Picking	.22	Grading	.05
Grading	.05	Nailing	.01
Orchard help	.01	Cartage	.05
Cartage	.05	Orchard help	.01
		Packing house help	.01
		Picking	.07
Total	$ .79 to .89	Total	$ .43 to .48

Box or Barrel, Which?

A high authority classifies some of the well known varieties according to the proper containers for shipment as follows:

In Boxes	*In Barrels*	*In Boxes or Barrels*
Grimes Golden	Greenings	Rome Beauty
Jonathan	Baldwins	Arkansaw
Winesap	Ben Davis	Baldwin
Delicious	York Imperial	Wealthy
Y. Newtown	Gano	Winter Paradise
Y. Transparent	Willow Twig	Oldenburg
McIntosh	Fall water	N. W. Greening
N. Spy	Roxbury	R. I. Greening
King	Salome	Alexander
Snow	Russets	Gilliflower
Wagener		
Pipins		

SEEING IS BELIEVING

A PAGE OF APPLES

GROWN IN WISCONSIN

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII **Madison, Wisconsin, October, 1916** **Number 2**

Exhibit of the State Horticultural Society at the State Fair, Milwaukee, September 11th to 16th.

The exhibit, 75 ft. in length and 7 ft. deep, was comprised largely of Wealthy, Duchess, Northwestern and Wolf River. Such an exhibit attracts the attention and admiration of the average Fair visitor but is not highly regarded by fruit men. It is likely that the Society will have an exhibit along different lines next year occupying even more space.

The 1916 State Fair

There may have been a better Wisconsin State Fair sometime in the dim past but for thirty years there has been none to equal it. I am sure of that because I have missed none of them in that time.

In speaking of the fair I have in mind only the horticultural building or rather the squatty little brick dump that somebody wished on us two years ago; of that more later.

Quite likely there were other things at the fair, poultry, cheese, pigs and maybe sheep and cattle but none of these count much compared with horticulture. Everybody, without exception visits the fruit and flower building, most of them go to the grand stand and no doubt many get as far down "Main St." as the cattle barns.

We had the whole building to ourselves this year, 80x190 ft., and it was well filled, not a blank space anywhere.

The apple exhibit was very light this year and if we have only an average crop next year an annex will surely be needed. That will answer for next year and then we will have the new $25,000 building, if everybody boosts for it and it won't need many more boosts like we had this year to convince even an "economy" legislature of our needs.

So far as exhibits are concerned there was nothing new; the show of apples in pecks, barrels, boxes and on plates was not different from last year, the amateur and professional flower shows were just a little bigger than last year but not much better in quality. The county fruit exhibits and the W. S. H. S. show occupied the same floor space with fruit only fifty per cent as good as last year.

Wherein then did the exhibit excel that of previous years? In arrangement, in order and system, in **management.** This is because we had a superintendent who applied all of his energies and skill in management to the task in hand.

To N. A. Rasmussen, superintendent is due the highest praise for efficiency and for bringing order and system out of what has been merely chaos in past years. On this point all are agreed.

A few of the flowers staged by members of the Milwaukee Florists' Club at the 1916 State Fair.

We had the word of Commissioner Norgord before the fair, months before, that no fakirs or bunco men would be allowed in the building this year and none were there. All of that bunch moved down into the grand stand this year with Mr. Dady and his Indians. We had instead of the fountain pen salesman and the other crooks of like color, shrubs, dahlias, seeds, etc. It was the *cleanest* building both figuratively and literally on the grounds.

Much space is given in this issue to the fair not so much for the benefit of those who did not go as for a matter of record. Some day some interprising person will write the history of horticulture in Wisconsin and will find the 1916 fair records readily available.

FAKIRS AND BARKERS

Conspicuous by their absence. The only "fair" privilege allowed in the building was a soft drink stand at each end of the building and the attendants never spoke above a whisper.

THE APPLE STAND

Apple exhibitors at the fair either in the premium class or otherwise owe thanks to the superintendent and A. K. Bassett, who jointly arranged to sell apples to apple hungry visitors. It has been heartbreaking in the past to stand guard over hun-

(Continued on page 21)

CRANBERRY NOTES

By J. W. FITCH

The season of 1916 will long be remembered by those who had cranberries to harvest as one of the most trying in years. A lack of water early in September caused many to begin very early with the result that many small green berries were gathered, the crop being at least two weeks behind the normal stage, then the rains and frosty weather, making it almost impossible to make much headway. The thermometers registered as low as 16 degrees but the loss was slight as most growers had accumulated sufficient water for flooding. Help was also scarce, which added to the troubles of the growers. But with sugar on the down grade and everything else bringing high prices, it looks like very good prices for the berries.

J. W. Fitch.

Eight Useful Suggestions

Try cranberry tapioca prepared like peach or apple tapioca, using cranberries instead of the other fruit.

Cranberry sauce is just as good with roast beef, lamb, or pork, and with steaks or chops, as it is with turkey and chicken. Its tartness counteracts the cloying richness of fatty meats.

Cranberry sauce makes the cheaper cuts of meat more palatable, consequently permitting a considerable saving in one's meat bill.

Some day when the oven is hot, put some cranberries into a baking dish; sprinkle generously with sugar, and bake till they are tender and the skins just broken. They are delicious.

Garnish fruit salads with cubes of bright cranberry jelly. These add immensely to both flavor and appearance.

A delicious pie.—Line a pie plate as for an apple pie. Fill with chopped cranberries, seasoning with spices to taste, and adding a bit of butter and a pinch of salt if the butter is fresh. Beat up one egg with a cup of sugar, and pour over the berries. Cover with an upper crust and bake.

A good drink.—Cover the cranberries with water; boil until soft; then strain. To one quart of the juice add one cup of sugar; let it come to a boil; add pineapple juice to taste; then bottle. Serve in glass of cracked ice.

Cranberry ketchup.—1 quart cranberries, 2½ cups water, 2 cups vinegar, 1 level teaspoon cloves, 4 whole allspice, 1 blade of mace, 2 inches of stick cinnamon, 2 cups of brown sugar. Tie the spices in a piece of muslin and cook them with the cranberries, water and vinegar until the berries are soft. Strain pressing the pulp through a collander, Remove the bag of spices, add 2 cups of brown sugar to the strained mixture and simmer ten minutes longer, cool and seal.

The Cranberry booth at the 1916 State Fair. This exhibit designed and staged by Mr. O. G. Malde was one of the most attractive in the building. The illustration does not do it justice.

Important Suggestions for the Use of Cranberries

Cranberry sauces should be served cold.

Cook cranberries in earthen, porcelain-lined, or enameled vessels only.

After cooking, place the fruit in glass or earthenware dishes.

Cranberries are an inexpensive and delicious food. There is no waste of material or of time in preparation; no peeling; no cores.

(Continued on page 22)

About This Time of the Year

We all do it. Every one of us. We feel it is our duty to do it. We, the people who write for the papers, about this time every year, remind you, who grow fruit and flowers in Wisconsin, that there is a long winter ahead and that many even of our "hardy" plants must be given protection if we expect them to do their best next year: That many others will do better for a little covering although classed as "fully hardy" in the books and catalogs.

In most cases plants require protection from winter sunshine rather than from winter cold. Two or three warm days in February with bright sunshine cause more damage to unprotected roses and raspberries than six weeks of below zero weather. We cannot expect to prevent any woody plants from freezing but in the case of the hybrid roses and other half hardy kinds we *must* protect them from sudden changes.

So for the amateur and perhaps for some who claim the title professional the following suggestions for winter protection are offered, copied largely from the October 1915 paper.

THE ORCHARD

Don't prune. Leave that job until March or April. Pruning leaves wounds and these not only will not heal until growth begins but the wood will check and the bark and underlying tissues die and thus prevent proper healing next spring.

Protect young trees from attacks of rabbits and mice. Wrap the trunks with tarred paper or use veneer strips fastened with string or wire. If paper or veneer is used it should be removed next spring. Tarred paper will surely injure the trunks if left on during the summer and veneer harbors insects.

For protection against mice mound earth around the trees to form a cone of six or eight inches. This is usually sufficient to turn mice. Tramping the snow around the trunks is sometimes effectual. Mice rarely trouble trees in cultivated orchards. Grass or weeds left around trees in the fall invariably attract mice.

This squatty little red brick dump, 72x192 ft. and 12 ft. from floor to eaves, would serve nicely as an "annex" for an exhibit of spray pumps but is not deserving the name of "Horticultural Hall." The hall needed by horticulture at the State Fair is not like this; for one thing it is four times as large.

BERRIES

Except in the extreme southern part of the state raspberries and blackberries should be given winter protection in order to insure a full crop. Some market growers never cover berry plants and claim they get a satisfactory crop every year. Their claims are not usually well substantiated. Crops from unprotected fields are often light and not infrequently the canes kill to the ground. **It pays to give winter protection.** To the novice it seems an impossibility to bend down and cover with earth a row of six-foot canes and yet it can be done. Use only heavy forks, not spades or shovels. Take out a little earth from one side of the clump, shove a fork down close to the canes on the other side and push and pull until the clump lies flat. It can be done. A few roots may crack but there will be plenty left. Anchor the tips with earth and proceed to the next clump. Later cover with 2 to 4 inches of earth. Some growers merely fasten the tips and depend on snow for covering. Sometimes we have plenty of snow.

GRAPES

Prune and cover the same as raspberries.

CURRANTS AND GOOSEBERRIES

Require no winter protection.

ROSES

The rugosas, the yellow garden roses, Persian and Austrian yellow, Scotch white and a few other hardy garden kinds require no winter protection, but the hybrids known variously as hybrid perpetuals, hybrid teas, etc., and including such varieties as "Jack," Paul Neyron, La France, etc., must be covered;

also the climbers, Dorothy Perkins and Crimson Rambler. By careful work, bending at the roots at the same time pulling down on the tops even large bushes may be laid flat without breaking. Peg down the tops and leave until the ground has frozen, when mice will have picked out winter quarters elsewhere; then cover with straw or leaves. Carpets or sacks laid over the bushes furnish ample protection if fastened securely. It is sunshine that winter-kills roses, not frost.

Roses may also be protected without bending them down by tying the bushes top and bottom and wrapping with carpet or sacks. In this case fasten the covering securely at the bottom. The loss of a few inches of the tips merely saves that much spring pruning but if the wrapping works away from the bottom we may have to prune close to the ground next spring.

PERENNIALS

Phlox, peonies, bleeding heart and other "hardy" herbaceous plants will *live* without winter cover, but if the roots have a winter mulch of leaves or manure the growth will be stronger and better next year.

So much at least we should do in October or November. It seems like a lot of work but it can all be done if the spirit to do it is present. It pays, pays in dollars and cents and in the feeling that we have done our share. We owe it to the trees and plants.

APPLE TREE BULLETIN

Tree Protectors

(1) Rabbits and mice are both very fond of the bark of apple trees and very often "girdle" them.

Protect the trunks of your trees all the way from the ground to the first branches. Use strips of wire (mosquito) screen folded around the trunks and fastened with wire.

(2) Tarred paper or even heavy building paper may protect from rabbits but not from mice. If either is used it must be removed next spring.

(3) A cone of earth around the base of tree (6 inches high) will usually turn mice.

(4) A shot-gun is also a good tree protector. The Game Laws permit you to kill rabbits, *on your own land*, at any time of the year even if you have no license. Be careful to observe the *underlined words*.

WINTER PROTECTION FOR STRAWBERRIES

(1) Sometime before winter sets in, the strawberry bed must be covered, not to protect the plants from frost but to protect them from heat.

(2) We want the plants to freeze in the autumn and most of all we want them to remain frozen until spring. Alternate freezing and thawing will seriously injure the plants.

(3) About Nov. 1st or after the ground is frozen and before heavy snow, cover the plants with any material that will keep out sunshine. A light covering is sufficient. The ideal material is marsh hay. Clean straw or cornstalks may be used. Branches of evergreen trees, hemlock, spruce, cedar, etc., furnish excellent material. Leaves are not desirable as these form a covering which is too compact. If stable manure is used it should be light and "strawy." Any material which contains weed or grass seeds is undesirable.

The 1916 State Fair

(Continued from page 18)

dreds of bushels of fragrant juicy apples and deny patrons of the fair the privilege of buying one to eat. This year Mr. Bassett sold apples in lots of two to a dozen with but slight profits we fear, but filled a long, long felt want. If apples are bigger and redder and riper next year A. K. should have a stand in every corner of the building, also one at the front entrance.

CRANBERRIES

For three years the cranberry men have had a place in the building but not until this year have they had an exhibit worthy of their industry. The picture of their booth tells the story.

NURSERY AND FLORISTS EXHIBITS

A new feature and a very satisfactory one. Two nursery firms the McKay Nursery Co., of Pardeeville, and the Coe, Converse & Edwards Co. of Ft. Atkinson each purchased space and installed attractive exhibits of shrubs, evergreens and shade greens. Although these firms paid for the privilege of being in the building they were in fact exhibitors and their displays were an attractive feature. The same is true of the dahlia and gladiolus stands installed by Mr. Ernst Eberhardt of Cedarburg and J. W. Fitchett of Janesville. There is food for thought in this for the fair management.

THE GENERAL EFFECT

Fruits and Flowers! No one who entered the building could be in doubt for a second which department of the fair the building held. No cases of "pottery" greeted him at the entrance as last year nor cake and embroidery on the side lines. Just one harmonious display of the products of garden and orchard.

Cranberry Notes

(Continued from page 19)

Cranberries stimulate the appetite and aid digestion. If served freely at meals, either in the form of sauce, jelly to spread on bread, or in some form of dessert, they will prove extremely beneficial to the general health.

Cranberries can be kept perfectly throughout the summer by sorting, washing, and sealing the raw fruit in glass or earthen jars filled with cold water which has first been boiled. Select sound berries only for this purpose.

MUCH OF INTEREST HERE

(Interesting notes by Irving C. Smith, teacher, gardener and philosopher, living at Ashland, Wis.)

THE DELICIOUS APPLE

It may be of interest to those who are contemplating the setting of Delicious apple trees to know that we set six trees a few years ago and they did very well in growth and lived over a mild winter. Two years ago they killed to the snow line. The roots were strong and they started a new growth, but they killed to the snow line on a cold winter, and we have had two of them in nine years.

APPLES AT ASHLAND

We have been picking a few bushels of apples this season and are very much pleased with the fine clean fruit. Very little scab. Have Duchess, Okabena, Wealthy, Whitney, Yellow Transparent, Tetofsky, Hibernal, Wolf River, Mackintosh Red, and Dudley, and all have some fruit and none have had any injury by winter killing. Even if there are no more hardy varieties we have some of the very best on the list.

We have seen a good deal in the papers of the very dry and burned up condition of things in the southern part of the state, but up here in the North we are not in a bad way at all. I was out in our little Alfalfa field today and the third crop is coming into bloom and is nearly knee high. That might be worse.

Say! fellow members, do you know it is a relief to me to be off the executive board, (probably you are more glad than I), but now if I am too busy or can not get away because of green house building, or some other reason, I do not feel that I must go to every society meeting. And once there I can enjoy things and do as I please. I know the Lake Geneva meeting must have been fine, but things were too thick here to leave. I have not died or lost interest, just taking a little vacation. You know Mrs. Smith and I went on our honeymoon vacation trip a couple winters back and in all our trip we did not see any better country to live in than Wisconsin. Of course it is fine to go down to Florida in the winter and get all full of grass ticks (chiggers) and eat oranges right fresh from the trees and pick lemons for the pie at the back door, and have grape fruit for breakfast every morning, but, before we got out of the state we saw a few apples and bought four for ten cents. They tasted like more. (They were not Ben Davis).

I went to see a "lovely" garden down there, and I should be ashamed to have any of you come here (of course you don't come any way) if my place looked no better than that one. Wisconsin is a good place to live in.

FALL SETTING OF STRAWBERRIES

We have been experimenting some with setting strawberry plants in the fall, and feel that there is a point here which should be brought to notice.

Our plants set last fall are a solid mass of plants now—we are afraid they will be too thick, while the spring set plants are doing fairly well with only about 25 per cent of the plants the fall set rows have.

This season we are setting all of our bed this fall, and spacing the plants 3 feet apart in the row. It is not too late to set them now if you have things in good shape. I have set them up to about Oct. 1st, with good results.

By the way, we have a few Progressive (only they look like Superb) and we forget to pick them. That shows how highly we prize them here, in the season of apples, and pears, peaches, and plums, apricots and grapes, melons and tomatoes and all the rest of the lot. It looks to me that is where the fall bearing strawberry will come out. In a few special cases it will be of value at home or on the market. Most of us have so many other fruits in the fall they are not appreciated.

Delphinium, or larkspur, that was cut back when through flowering last spring is making a fine showing in autumn.

Trees and shrubs may be set in autumn, but as a rule it is better to wait till spring. Large trees with a ball of frozen earth about the roots may be moved to advantage late in the autumn.

The Rudbeckias

Gray lists six species, laciniata, subtomentosa, triloba, speciosa, fulgida and hirta.

Wilhelm Miller in the Cyclopedia of Horticulture adds to these amplexicaulis and maxima, both southern varieties.

Of Gray's list but two are common in this state. R. laciniata and R. Hirta. The former is found most often in woods and shady places but occasionally in meadows. The plant is tall and slender with rough leaves and greenish yellow flowers with a dull yellow center. Golden Glow is a double flowered offspring. R. hirta or the true Black Eyed Susan, sometimes she is brown-eyed, is common in meadows thruout Wisconsin and is in full glory in September and October.

R. triloba occurs occasionally in southern Wisconsin and is distinguished by somewhat smaller flowers than R. hirta with less recurved petals and tri-lobed leaves. All are easily grown from seed. October is the month.

Narcissus, Water Grown

For lovely Christmas flowers start a dozen paper white narcissus just six weeks before Christmas using the water culture method. Use shallow dishes, not over two inches deep, fill with small stones, pour in water and set the bulbs on or between the pebbles with the bottoms just touching the water. Under no circumstances use deep jars or dishes nor have more than one third of the bulb immersed. These bulb gardens may be set at once in a window or in any convenient spot. No skill is required nor any attention except to renew the water.

County exhibits of fruits in commercial packages 1916 State Fair.

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Change in Entomologist

Prof. J. G. Sanders, who has been State Entomologist of Wisconsin for the past year and was entomologist of the Experiment Station for five years before that, resigned his position on September 1. He is now Economic Zoologist of Pennsylvania, where he expects to have a somewhat wider field of work in a more thickly populated state. The State Horticultural Society,

THE ANNUAL CONVENTION

"WINTER MEETING"

WILL BE HELD IN

Madison, December 12, 13, 14, 1916

Three Full Days

Both plain and fancy talks by the best fruit and flower growers in Wisconsin, supplemented by any worth while talent we can pick up elsewhere

BETTER THAN AN INSTITUTE

Big Fruit Display

(If you help to make it)

The program is being arranged now. Write to the Secretary at once naming subjects you want presented

through its secretary, expressed to him their regret at his departure and their best wishes for his success in the new field.

During the month of September, Dr. S. B. Fracker, who had been associated with Prof. Sanders, was Acting State Entomologist and took charge of all branches of the work of the office. Just before going to press we learn that Prof. E. D. Ball, has been appointed to the vacancy and will come to Wisconsin on October 1. The new State Entomologist is from Logan, Utah, where he has been Dean of the College of Agriculture and Director of the Experiment Station for a number of years. He is a man of long entomological experience and one who has been a successful executive. *Wisconsin Horticulture* bespeaks for him the loyal support of the nurserymen and fruitgrowers.

Red Spider Work

The common red spider, known to scientists by the imposing name of *Tetranychus telarius* Linn., which is an ever present pest of many of our garden flowers, has come into unusual prominence this summer. Most of the readers of *Wisconsin Horticulture* are unfortunately so familiar with the work of this mite that it is scarcely necessary to describe it. The pest, as the name indicates, is a minute red, eight-legged spider at which we must look closely in order to be able to see it at all.

The injury which it causes is due to the puncturing of the tissues of the leaf from the under side and the withdrawing of the liquid contents of the leaf cells. The mouth parts of the mite are especially adapted for this type of work, which is not greatly different from that of the less known Greenhouse thrips. The leaf affected shows minute spots or puckerings, usually white or yellow.

In greenhouses the red spider is almost always present and its work may also be found on many of our outdoor flowers. Phlox seems to be one of its favorite hosts. The most serious complaints this year have been from the raspberry growers near Lake Winnebago, where a considerable loss has resulted from its work.

While measures of prevention such as clean culture, crop rotation, etc., are of some value in reducing the attacks of the mites, whenever they are numerous it is necessary to use a spray. The materials most commonly employed are either dry sulfur, used with the so-called powder gun, or ordinary commercial lime-sulfur diluted with forty or fifty times its volume of water. "Black Leaf 40" added to the lime-sulfur or used alone is also said to give good results. If a thin flour paste is added to the spray mixture, whether it be sulfur and water or lime-sulfur, the results are improved.

I wish to emphasize the use of water alone, especially where it is available under city pressure, as this forcibly knocks the mites from the plants and injures so many of them that the danger is greatly reduced. Fumigation such as is ordinarily carried on in greenhouses does not seem to be effective, whether tobacco or cyanide is used.

S. B. Fracker,
Acting State Entomologist.

Good cider vinegar may be made from surplus and poor apples.

Parsnips, carrots and other root crops are easily dug if a furrow of soil is thrown away from the plants. They can then be pulled sidewise.

McKAY NURSERY COMPANY
PARDEEVILLE - WISCONSIN

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds.
Prices and our new Catalog sent promptly upon receipt of your list of wants.

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

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Wauwatosa, Wisconsin

A Cellar Garden for Winter

N. A. RASMUSSEN

While we are planning our summer garden let us also give a thought or two to our next winter's cellar garden, as we may need now to prepare a trifle. Have we any good rhubarb roots? If not let us get some at once. A few roots and a barrel of saw-dust is all that is necessary for the winter garden.

Take three-year old plants, or as much older as you may have them and dig these plants late in the fall just before it freezes up. Sink your spade full length of blade, cutting a circle close to the hill, then by carefully prying you can lift the hill in a solid clump without loosening the dirt or breaking the roots to any extent. Place these roots on the north side of a building or bush (out of the sun) and let them freeze for about four weeks, this is very essential for if they are not thoroughly frozen the crop will be a failure. Now take an old barrel of any kind put in about four inches of saw-dust or garden soil, even coal ashes will do, but saw-dust is light and clean and holds moisture well. Next place the frozen clump in and pack saw-dust or other material around roots and cover to the depth of about three inches. If you leave the crown exposed you will get too many small stalks. See that the filling is two or three inches higher around the outside of the barrel than in the center, thus preventing the water from running down the outside of the barrel onto the floor. Place in the cellar, water well and cover with carpet, burlap or anything convenient that will entirely exclude the light. Light would develop leaf at the expense of the stalk thereby lessening the crop; light would also rob the stalk of its rich red color, delicate flavor and tenderness.

Now all you have to do is to keep it watered and watch it grow. The temperature of your cellars may vary from 35 to 70 degrees Fahrenheit. The higher the temperature the faster it will grow, but any cellar will grow rhubarb. A hill of rhubarb handled in this way will produce more pounds of edible plant than if left in the ground as its food

A barrel of pie fruit, cellar grown: photographed January 1916. Grown by N. A. Rasmussen. See article on p. 26.

has all been stored in the root for the coming season and is all transformed into stalk instead of leaf.

Asparagus may be grown in the same way except that it must be kept warmer and must be given some light and it will be found more delicate to handle. Green onions may be grown from sets in flat boxes and may be given plenty of light. If one has plenty of room and a little time beet greens might also be added to the list, planting the old beets same as onions.

These notes were written March 1916. *Editor.*

PATENTED AUG. 13, 1907

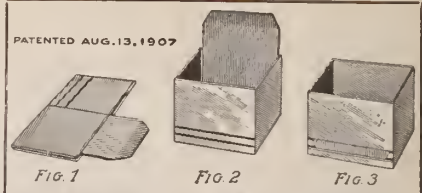

FIG. 1 FIG. 2 FIG. 3

BERRY BOXES

Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Co.

Dept. D, Cumberland Wis.

Fertilizer for Roses

As the result of a series of experiments carried on by Dr. F. W. Muncie of the Department of Floriculture at the University of Illinois, the interesting conclusion has been reached that the use of acid phosphate as a fertilizer increases the rate of production of roses to a remarkable extent, perhaps a hundred times.

Squash and pumpkins keep better if harvested before frost. They should be handled carefully to prevent bruising.

October is the season for planting tulips, hyacinths, and all other Holland bulbs. Read again the excellent article by Prof. Moore in the September number.

A Weevil in Orchids

Early this spring, Prof. J. G. Sanders, while making an inspection of imported nursery stock at one of the larger greenhouses in Milwaukee, had called to his attention an insect which was causing a very great loss among the Cattleya Orchids. The larva which did the damage is large, reaching a length of half an inch and is a fat, fleshy grub. It develops in the stem of the plant, pupates and finally emerges as an attractively marked black and white weevil. The result is a complete destruction of the leaf-stem with a consequent failure to blossom.

The foreman of the greenhouse did not realize the relation between the weevils and the larva at the time and was very much surprized to learn that these attractive "bugs" were the cause of his loss. Prof. Sanders, not recognizing the insect, sent several samples to the entomological division of the United States National Museum for determination. Those who specialize on this group in Washington, in turn sent a sample to a specialist in England and he also failed to recognize the species. It is consequently being described as new in an entomological journal at Washington, D. C.

This insect is rapidly being reduced in numbers by the assiduous work of the foreman of the greenhouse and no Cattleyas are being sent out from the place at the present time.

It is hoped that this sporadic infestation may be entirely eradicated within the next few months. The orchids on which the weevil entered came from South America and it is certain, therefore, that the weevil is a tropical species.

S. B. Fracker,
Acting State Entomologist.

Autumn Wild Flowers

Of these the Rudbeckias, black-eyed Susan or cone flower family, golden rod and asters are most widely distributed in our state. All of these stand transplanting well and all improve in size of flower and depth of coloring under cultivation. While it is not well to rob the woods and roadsides of native flowers quite often small clumps may be spared from meadows and pastures and will add grace and beauty to the flower border. Now is the time to get them, when in bloom, for you will need be expert indeed to select some of them in spring.

A word to our city friends: We country people will gladly grant you the privilege of digging a few wild flowers from the back lot if you *ask permission*, but we don't like you to climb fences and tear across fields as if we were not to be considered even if you are only digging "weeds." Kindly come to us and we will meet you more than half way.

Gladioli are easily kept over winter in the vegetable cellar. After the first frost cut them off a few inches from the ground, dig, and place in a convenient place where they will not get wet. When dry, store in the vegetable cellar.

The Kickapoo Valley
Wisconsin's Favored Fruit District

Our Specialty: Planting and developing orchards for non-residents.

A few choice tracts for sale. If interested, write us.

The Kickapoo Development Co.
Gays Mills, Wis.

JEWELL MINNESOTA GROWN
Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Co.
Lake City, Minnesota

Quality Stock
Strawberries
Native Plum Apple Small Fruits
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money
62nd Year
Kellogg's Nurseries
Box 77, Janesville, Wis.

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON
SHEBOYGAN, WISCONSIN

Retrospection

By H. C. Melcher

Anticipation at last gave way to realization. We are still a little too near to it to do it justice for it looks larger every day.

The Lake Geneva Gardeners Association had promised that when all things were ready we would be their guests at the Summer meeting. To those who knew some of these members personally we thought we knew what that invitation meant, but at the close, while we would plead "not guilty" to the charge of intoxication we were really "too full for utterance."

The whole thing was delightfully planned. The trip on the boat the first day with the banquet at the Golf club house would easily have been the leading event at any other meeting and if the Association had done no more than this they would always be pleasantly remembered.

But the big things really began the next day, when a circuit of the lake was made.

The rugged beauty met at the first place (Mitchells) could not help but impress everyone. The extensive flower gardens under the direction of Mr. Smith forces us to the conslusion that he is the right man in the right place.

No one of the party will ever forget the cordial reception accorded us at the next stop (Seipps). That is was sincere is evidenced by the hospitable way in which we were treated, and the invitation to "come again" would like to be accepted by all. At Moore's we found variety enough to please everyone and we found the horses had many admirers; but horticultural interests have not been neglected, and no one can talk long to Mr. Martiny without coming to the conclusion that it wouldn't take much remodeling to make an up to date fruit man of him.

To the fruit men of the party the next stop was most interesting, and the fruits grown under glass were a marvel. If there is any one besides Axel Johnson that can do those things we would like to know it.

The last stop of the day was made at Hutchinsons where Mr. Longland is superintendent, and here as in other places we can see the impress of the man in charge, and who, with his bird-loving wife did so much to make the stay here pleasant.

At the close of the day the remark was made by one of the party that he had lived fifty years in that single day, meaning that the events of the day were more than come to the ordinary mortal in fifty years. It seems to me this is the highest compliment that could be paid the management.

By Wm. Toole Sr.

Great improvements have been made in Lake Geneva town since our first meeting and one of the most useful as well as ornamental is the hall and show rooms of the Lake Geneva Gardeners. A limited article is called for so all the words of praise which the gardeners deserve will not be given, but I must say that their club is a fine example of the value of organized getting together.

Some of the pecks and plates of apples at the 1916 State Fair.

The program of the Horticultural society had not called for any exhibits yet our good friends greeted us with a beautiful display of flowers in profusion and variety. With a wonderful array of garden vegetables, such as we farmers could not this season raise, in our dry superheated gardens.

The program as carried out was very interesting, and we chased the red spiders and other harmful garden pests to the end,

that there shall be no rest for them in the future. At noon time the first day, they took us on a two mile trip across one corner of the lake to the country club house, and gave us a feed, which they called a lunch, but it was a banquet with the speaking left out, except the neighborly chats of the participants.

The discussions were so well enjoyed that they were carried into an evening session. I nearly forgot to mention the two fine displays of gladiolus by Mr. Hinkle of Madison and W. J. Moyle of Union Grove. The two collections were fine for any season, but undoubtedly would have been still better if the weather had not been so excessively hot preceding the meeting. On Wednesday we had one of the great times of our lives, visiting many of the estates, each of which showed special features indicating the tastes of the owners and skill of the managers. The rides on the big boat to and from the various estates were most enjoyable, and when we returned to Lake Geneva, autos were in waiting to take us around the lake including a visit to the Lick Observatory. We were pleased to be greeted as brother horticulturists by the eminent professors who are members of our state society. This fourteen mile ride also included a visit to the state trial orchard which we found in good order, with a fair showing of fruit for so young an orchard.

About six p. m. we returned to Lake Geneva having been on the go since 8:30 a. m. and we surely went some. The auto ride I think was a treat from the commercial club, members of which we met at the banquet in the evening. The banquet although last, was among the best of the treats given us. There were no second bests at any time. The more we know them the prouder we are to think that the Lake Geneva Gardeners association is a part of the Wisconsin State Horticultural Society, and if we cannot claim the Lake Geneva Commercial club as brother horticulturists we will always have a fraternal regard for these men who entertained us so handsomely, and have done so much in the last few years for the development of Lake Geneva City.

By W. J. Moyle

Yes I was there—during the Elkhorn Fair this week I again met Judge Lyons of Elkhorn, he was also at the meeting and as we shook hands we both acclaimed as with a single voice, "Say but wasn't that a glorious time we had at the summer meeting at Lake Geneva."

And as I sit at my desk today and recall those two days of panoramic, beauty and pleasure afforded us through the excellent and efficient management of that princely bunch of fellows, "The Lake Geneva Gardners Association," the muse leads me to exclaim:

"*Like little children hand in hand*
We Wandered away in fairy land."

The most interesting feature to my idea was the opportunity to make a study of the extensive plantings of the rare and beautiful flora to be found on many of the charming summer estates that bask in the sunshine on the hills of this charming lake.

With the respective Superintendents as guides; everyone a botanist to his finger tips, what a pleasure!

And the boys, everyone out vieing the other in order to give us a good time. What could we do without Mr. Smith with his ever lasting Rose gardens, the pride of his heart, Mr. Johnson with his affable pleasing ways and marvelous hot houses of Hamburg grapes and Mr. Longland so deferential and unassuming.

Boat rides, banquets, and that auto trip around the Lake when we stopped at the Yerkes Observatory to see the spots on the sun and incidentally to have our own vision multiplied about one million times as to the insignificant, incomparable littleness of our own terrestrial globe and even the doorway on whose threshold we stand and proclaim our greatness.

"What fools we mortals be." But where ignorance is bliss t'is folly to be wise.

Have you saved seed of fruiting shrubs and nut plants to plant next spring? Put them in sand until spring and then plant.

SALESMEN WANTED!

We are in want of a few reliable, energetic men to act as agents for the sale of our Northern Grown Trees, Shrubs and Vines from our Nursery. Previous experience not essential; live active men can earn good wages. For our terms address, giving full name, age and reference,

GREAT NORTHERN NURSERY CO.

Baraboo, Wis.

STANDARD BASKET LAW

Fixes Standards for Containers for Fruits, Berries, and Vegetables in Interstate Commerce

Standards for Climax baskets for grapes, other fruits, and vegetables, and other types of baskets and containers used for small fruits, berries, and vegetables in interstate commerce, are fixed by an act approved by the President August 31, 1916. The law will become effective November 1, 1917.

The effect of the act will be to require the use of the standards in manufacturing, sale, or shipment for all interstate commerce, whether the containers are filled or unfilled. A large part of the traffic in fruits and vegetables in this country enters interstate commerce. The law relates only to the containers and will not affect local regulations in regard to heaped measure or other method of filling. A special exemption from the operations of the law is made for all containers manufactured, sold, or shipped, when intended for export to foreign countries, and when such containers accord with the specifications of the foreign purchasers, or comply with the laws of the country to which the shipment is destined.

Standards of three capacities are fixed for Climax baskets—2, 4, and 12 quarts, dry measure. These containers, often known as "grape baskets," have relatively narrow, flat bottoms, rounded at each end, and thin sides flaring slightly from the perpendicular. The handle is hooped over at the middle from side to side. In addition to fixing the capacities of these standard baskets of this type, the law also prescribes their dimensions.

The other standards are for "baskets or other containers for small fruits, berries, and vegetables." They are to have capacities only of one-half pint, 1 pint, 1 quart, or multiples of 1 quart, dry measure. Such containers may be of any shape so long as their capacities accurately accord with the standard requirements.

The examination and test of containers to determine whether they comply with the provisions of the act are made duties of the department, and the Secretary of Agriculture is empowered to establish and promulgate rules and regulations allowing such reasonable tolerances and variations as may be found necessary.

Penalties are provided by the act for the manufacture for shipment, sale for shipment, or shipment in interstate commerce of Climax baskets, and containers for small fruits, berries, and vegetables not in accord with the standards. It is provided, however:

That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the manufacturer, wholesaler, jobber, or other party residing within the United States from whom such Climax baskets, baskets, or other containers, as defined in this act, were purchased, to the effect that said Climax baskets, baskets, or other containers are correct within the meaning of this act. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of Climax baskets, baskets, or other containers, to such dealer, and in such case said party or parties shall be amendable to the prosecutions, fines, and other penalties which would attach in due course to the dealer under the provisions of this act.—*Weekly News Letter, U. S. Dept. of Agr.*

Garden Notes

The ripe fruit of the common green elder is often used for pies, sauce, syrup, and wine.

The raspberry patch should be cleaned up. Old canes should be pruned out and burned. Perhaps they contain insects or disease. Fire will help to cure these troubles.

The hard maple, sumac, hazel, and other shrubs and herbs are taking on their fall colors now. These, with the fruits of the wild grape, bittersweet highbush cranberry, and snowberry, make a trip in the fields a pleasure.

Many new seedling roses of merit are being put out by rose-growers in Ireland.

It is sometimes a good plan to pull tomato vines, when a hard frost is expected, and hang them in a shed to let the fruit ripen.

Follow up the premium won at the state or county fair with a little judicious advertising. It will help make sales.

Now is a good time to get together the horticultural books, bulletins, and papers for use this winter.

The motor car is fast becoming a necessity in marketing fruits and vegetables. Not only is time saved which can be used profitably otherwise but the products of the orchard and garden reach the market in much better condition than if several hours on the way.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

Tile Trap for Rabbits

An inexpensive and permanent sewer tile trap for cottontail rabbits, which has proved very effective in Kansas, is described in Farmers' Bulletin 702, "Cottontail Rabbits in Relation to Trees and Farm Crops." Details of this trap were supplied by Mr. J. M. Walmsley, who has used it successfully on his and other farms in that state. To make the trap, proceed as follows:

Set a 12 by 6-inch "tee" sewer tile with the long end downward, and bury it so that the 6-inch opening at the side is below the surface of the ground. Connect two lengths of 6-inch sewer pipe horizontally with the side opening. Second grade or even broken tile will do. Cover the joints with soil so as to exclude light. Provide a tight removable cover, such as an old harrow disk, for the top of the large tile. The projecting end of the small tile is then surrounded with rocks, brush, or wood, so as to make the hole look inviting to rabbits and encourage them to frequent the den. Rabbits, of course, are free to go in or out of these dens, which should be constructed in promising spots on the farm and in the orchard. A trained dog will locate inhabited dens. The outlet is closed with a disk of wood on a stake, or the dog guards the opening. The cover is lifted and the rabbits captured by hand.

These traps are especially suitable for open lands and prairies, where rabbits can not find natural hiding places. They are permanent and cost nothing for repairs from year to year. If it is desired to poison rabbits, the baits may be placed inside these traps, out of the way of domestic animals or birds. This trap also furnishes an excellent means of obtaining rabbits for the table, or even for market.

Sweet russet crabs make good sweet pickles, and, although small, are also good baked.

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

FLOWERS

MILWAUKEE FLORIST CLUB. By Eug. Oestreicher Sec.

It is with a feeling of satisfaction that we recall the flower and plant exhibits displayed at the State Fair from September 11 to 16. Considering the adverse weather conditions which prevailed during the summer months the quality of the out door grown cut flowers while not quite up to the standard still made a good showing and were admired by many; weather conditions plus the early date of the Fair also were responsible for the lack of green house grown stock, which always give the finishing touches and arouse special attention.

In the Palm and Fern line there never was such a display of variety as this year; the design and basket work was of a better quality than usual and last but not least the exhibit of perennials was large and of good quality. The arrangement too, as practiced this year was a very great improvement over former years displaying the stock to better advantage and making it easier for the public to get a better view of any particular exhibit.

In regard to quality and quantity the showing made in the amateur class also deserves a word of praise. This display could, if properly arranged, have covered at least three times more space; too bad that it had to be all crowded on that one table, thus hiding many a good point which ought to have come to the front. We trust that some time in the near future we will get a much larger Horticultural Building which will be a credit to the Fair and the whole State of Wisconsin.

The frost on the night of September 15 to 16th, which by the way was about four weeks ahead of time, did considerable damage to all soft wooded plants, such as Geraniums, Begonias, Salvias, Cannas, Dahlias, etc. on the outskirts of Milwaukee, with a lengthy period of favorable weather a good many of the plants which were only nipped, will continue to grow and grow again, affording great pleasure, so don't be in a hurry to pull them up and consign them to the rubbish pile.

While it is a good time to plan just what kind of bulbs you intend to plant in this or that place, any time after the 15th of October is plenty early enough to do planting.

Don't dig up those Canna roots until the foliage is frozen to the ground; then cut the old foliage back to within 6 inches from the ground and put the roots in a frost proof cellar until early spring; try to keep some soil on the roots as it will be a great benefit to help tide them over.

In order to have nice large Geranium plants in the spring, now is the time to take cuttings or "slips" as mother used to say.

Fix the dates in your mind, Dec. 12, 13, 14.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Perennials or Herbaceous Plants

Axel Johnson, Lake Geneva, Wis.

Perennials or herbaceous plants are gaining more and more favor justly so because they are some of our most beautiful plants both for perennial beds and mixed borders; also for edging up shrubberies. They are easily handled. The soil should be prepared and enriched with a good fertilizer before they are planted. Most of them can be undisturbed three or four years and some of them much longer. Most of them can be increased by division planted early in the fall. For the winter is required a light mulching of leaves which will serve to keep the action of the sun off the plants, preventing the plants from lifting, or as we call it, heaving out of the ground which would kill the roots of the plants. It will also serve to keep the plants dormant longer in the spring which is desirable on account of the late frost we sometimes have. The list of perennials is so great that I shall only attempt to mention a few:

Aquilegia Hybrida
Babtisia Australis
Campanula Persicifolia & Carpatica
Dianthus Plumaris

Wisconsin ferns are the most beautiful of all ferns. Kilbourn, Wis.

Dictamnus Fraxinella
Dielytra Spectabilis.

Then we have the German Iris. Of this class of plants we have many beautiful varieties that are almost as pretty as orchids, such as

Madam Cherau
Pallida Delmatica, King of Iris
Rheine Nix, Queen of May.

Then we have the peony which ranks a close second to the rose. They are most beautiful when in bloom and when they are through blooming they are still

good on account of their beautiful foliage which keeps its glossy color throughout the summer and in the fall they change to a bronze shade which when planted along the edge of shrubbery is very effective. They are absolutely free from insects and disease. The number of varieties among the peonies is so great and varied in color that I shall only mention a few of the old "stand-bys":

Festiva Maxima
Delicatissima
Madam Furtado
Filix Crousse.

Thermapsis Caroliniana is a plant that is not grown very extensively but should be grown more. They are absolutely hardy, come early in the spring with their beautiful foliage and yellow pea-shaped flowers in long racemes. Then we have the well known Anthemis Tinctoria, also:

Delphinium Chinensis and Formosum
Gailardia grfl.
Gypsophila paniculata
Japanese Iris
Lysimachia Fraserii
Monarda Didyma.

The phlox ranks a close second to the peonies, and by some growers are considered better than the peonies on account of their longer season. There are some beautiful varieties among them and should be grown more extensively. Such varieties as

Panthean
Bridesmaid
Cocquillicot
Frau Buckner
Mrs. Lingard

are well worth a place in any garden. Pladycodon Jap. also claims our attention as well as Spirea Palmata, S. Aruncens, S. Venusta, and our old fashioned Hollyhock.

Thalictrum Deptorocarpus is one of the newer ones, but has proved perfectly hardy and free blooming and should be grown extensively.

Yucca Filamentosa and Veronica Spicata and V. Longifolia Subsessilis are well worth having. Aconitum Napellus, A. Bicolor, and Fisheri follow each other, Fisheri being very late. Artemesia Lactiflora is very good to cut as well as for ornament. Helianthus Multiflora, H. Miss Mellish, Hibiscus Crimson Eye, and Mallow Marvels are very showy. Lobelia Cardinalis the well known cardinal flower, Rudbeckia Newmania, R. Laciniata and Purpurea, Boltonia latisquama, Helenium Autumnale superba are very showy and good for cutting, being that they come quite late in the season.

All the varieties here mentioned are perfectly hardy and easily handled and all can be propagated by divisions.

Marketing Ideas

The following letter from Mr. F. Kern well known in this state as a successful market man will, we are certain, be read with interest by all of our members who are directly or indirectly interested in marketing fruit.

Traverse City, Mich.,
Oct. 19, 1916.

My Dear Cranefield:

Just received your letter this morning and note date of meeting and what you say about the Illinois apple crop, and it set me thinking how that crop ought to be marketed. My suggestions are, as follows:

Marketing is the one topic occupying the attention of the Department of Agriculture at Washington and many of the State Agricultural Departments. There's a reason. On the successful marketing of the crops of these United States depends the prosperity of the Agricultural and Horticultural interests, which are really the foundation for all prosperity; for, if these interests prosper, the United States prospers accordingly.

New York has made a tremendous effort to aid the growers in the way of marketing. Michigan is making an effort in the grape sections. Wisconsin has done little as a State, but the Wisconsin State Horticultural Society has made an effort, and, in every instance, it has developed that little can be done without first organizing the state or community.

Wisconsin has more successful co-operative organizations than any other State in the Union; these principally creamery and cheese organizations, and, through organization, a market has been established for Wisconsin cheese that has put it at the head of the list. Wisconsin is known the world over as the greatest dairy state in the United States. The State has natural advantages, but the wonderful progress of these two industries has not been the result of individual effort.

One of the first successful fruit districts in the Middle West was that at Sparta, but it was not successful as long as each individual attempted to do his own marketing. That district organized one of the first Fruit Growers' Associations in the Middle West, and, when the Pacific slope began to develope the fruit industry, Mr. Paulhamus, of Puyallup, Washington, went to Sparta to study co-operative organization, and from the information gained, he organized the greatest organization of growers of small fruits in the United States, an organization

(Continued on page 38)

CRANBERRY NOTES

By J. W. FITCH

Berries Small but Quality High

Cranberry cleaning shows that the berries are generally running quite small, some crops showing as high as 38 per cent "pies." One of the lessons of the season seems to be that the vines the best drained had the least blight, also that the vines which were sanded and drained well had larger berries than last year, at least that is the result apparent to the writer. A very extensive campaign for increasing the consumption of cranberries, is being conducted by the American Cranberry Exchange in Chicago. About twenty thousand dollars will be spent and it is hoped to increase the consumption of cranberries from forty to eighty thousand barrels in that city. If successful the work will be extended to other places next year and a much larger sum will be expended.

Important Committee Meeting

A very interesting and important meeting of the committee appointed at the August meeting to consider the future continuance of the experiment station was held at Mather, Oct. 23d, the meeting being postponed from Oct. 20th. The members of the committee present were Mr. F. J. Hoffman, C. M. Secker, and J. W. Fitch. Mr. Andrew Searls and A. B. Roberts absent. Mr. O. G. Malde, superintendent of the station, was there to help the committee in their decisions.

The committee was unanimous as to the value and necessity not only of continuing the station along the present lines but of enlarging its scope to include demonstration, commercially as well as research though recognizing that the work of research was the most necessary for the industry and that such investigations should not be sacrificed in order to make the station self-supporting, which Mr. Malde thought entirely practical. Looking as well as it was able into the future and considering carefully the present conditions of the station, and the refusal of the present management of the Gaynor Cranberry Co. to renew the lease, the committee resolved that the location of the station should be changed. First to obtain more suitable soil conditions, second, for a sufficient water supply, third, that there should be at least forty acres for developing purposes, outside of reservoir requirements. Also it was felt that a much more accessible site could be obtained. Several offers of land with good water privileges were presented; also the possibility of getting a bog already planted were considered and will be duly forwarded to Dean Russell to present to the regents for their consideration. The matter of the premium list for the next state fair, was arranged and a systematic effort will be made to have all growers compete. Mr. C. M. Seeker of Mather and Mrs. S. W. Whittlesey of Cranmoor were appointed to represent the association at the winter meeting of the Horticultural Society, where an exhibit also will be made.

SCORING THE APPLES.

A new feature in judging the apple display at the recent State Fair was the systematic scoring system introduced by the judges Professors Moore and Roberts, of the Agricultural College of Madison. Being in a position to observe carefully its operation, I take this opportunity to pronounce it a howling success. Never were the apples gone over more carefully and never were the awards more conscientiously given. Every exhibitor got just what he had coming, no more, no less. And of course this tickled the Kickapoo crowd who won the Grand Sweepstakes thus walloping one over the Baraboo boys who as a rule are the winners.

They certainly can grow some apples on those old bluffs in Crawford County. But watch next year, the Baraboo tribe will be out on the war path, and the Kickapoos will have to swing their tomahawks if they succeed in carrying off the ribbons.

When considering improvements for the Horticultural department at the State Fair for the coming year, we trust the management will see to it that the valuable feature is continued and let us hope that the competent service of these same judges can be secured again.

W. J. Moyle.

Autumn-bearing strawberries have done well this year only where they have had plenty of moisture. Nevertheless they are worth growing in the home garden.

Don't be discouraged because the dahlias were a failure this year. Try them again next season. It is best not to plant until June.

Apple Forecast By Varieties

The September 1 forecast of total apple production this year in the United States, as reported by the Bureau of Crop Estimates, U. S. Department of Agriculture, is 67,679,000 barrels of 3 bushels each (agricultural and not commercial basis), as compared with 76,670,000 estimated produced last year, of which not quite 65 per cent were sold. In the past ten years estimated production has exceeded the present forecast five times. Taking the country as a whole, it thus appears that the apple crop will be nearly an average, but 12 per cent smaller than last year's large crop. The crop is larger than last year in the Atlantic Coast States, including New York and Pennsylvania, and in the Pacific Coast States, but smaller in practically all the interior States except Michigan, which has about 34 per cent more than last year. For the first time this year an attempt has been made to forecast the crop by important varieties.

The following estimates are based upon reports from special lists of apple correspondents to the Bureau of Crop Estimates:

Baldwin appears to be the leading crop this year, with a forecast of 9,302,000 barrels, an increase of 12 per cent over last year's production. Ben Davis, which was the leading variety as to quantity last year, falls to second this year, with a forecast production of 9,245,000 barrels, which is 17 per cent less than the production estimated last year.

The Winesap forecasts a production of 3,794,000 barrels, a decrease of 32 per cent from last year.

Greening forecast is 3,739,000 barrels, an increase of 4 per cent over the estimated production last year.

Northern Spy forecast is 3,602,000 barrels, an increase of 25 per cent over last year's estimated production.

The Wealthy forecasts a production of 2,863,000 barrels, a decrease of 13 per cent from last year's crop. Michigan forecasts a production of 495,000 barrels, an increase of 33 per cent over last year's estimated production; New York 389,000, an increase of 57 per cent; Iowa 290,000, a decrease of 48 per cent; Wisconsin 215,000, a decrease of 43 per cent; Pennsylvania 177,000, an increase of 39 per cent; Minnesota 140,000, an increase of 1 per cent; Ohio 124,000, a decrease of 17 per cent; Illinois 85,000, a decrease of 63 per cent; all other States 948,000, a decrease of 13 per cent.

The Rome Beauty, with a forecast of 2,770,000 barrels, is 21 per cent short of last year's estimated production.

Oldenburg variety forecasts a production of 2,001,000 barrels, which is 8 per cent less than last year. Michigan forecasts 505,000 barrels, an increase of 30 per cent; New York 395,000; an increase of 144 per cent; Iowa 218,000, a decrease of 47 per cent; Wisconsin 195,000, a decrease of 39 per cent; Pennsylvania 140,000, an increase of 52 per cent; Illinois 60,000, a decrease of 68 per cent; Ohio 53,000, a decrease of 51 per cent; all other States 435,000 barrels, a decrease of 16 per cent.

McIntosh forecasts a production of 1,012,000 barrels, an increase of 31 per cent over last year. New York forecasts 357,000 barrels, an increase of 55 per cent; Maine, New Hampshire, Vermont, and Massachusetts combined, 194,000 barrels, an increase of 109 per cent; all other states 461,000 barrels, an increase of 2 per cent.

Fameuse (Snow) forecasts a production of 1,005,000 barrels, an increase of 1 per cent.

Geraniums.

In all but semitropical portions of the United States geraniums must be taken indoors for winter. Florists usually make cuttings in the fall to grow new plants in greenhouses for spring use. This practice is, of course, impracticable for the average householder. The latter may take up growing plants and hold them in a dormant condition by storing upright in boxes of dry soil in a cellar having a temperature of from 40° to 50° Fahrenheit. The plants may be placed close together with only a little dry soil among the roots.

Preparing Shrubs for Winter

While a number of the shrubs commonly grown in the garden will go through the winter without injury if let alone, others must be given varying degrees of special attention. Among the shrubs which need no unusual fall and winter care are snowball, spirea, mock orange, and lilacs.

The highbush cranberry is a decided addition to a shrubbery planting at this time of year. The fruit is showy.

Fruiting branches of the Euonymus or "Burning Bush" cut before hard freezing make good boquets for a porch vase. They will last until quite late in winter.

Apples picked carefully from the tree and wrapped in paper keep well. Do not store apples in a potato cellar as they take up odors.

FLOWERS

MILWAUKEE FLORIST CLUB. By Eug. Oestreicher, Sec.

Now that the heating apparatus is in operation night and day, plants in pots dry out more rapidly than heretofore. No matter how healthy a plant, how good a soil and how ideal the location, nothing will spell ruin quicker than continued dryness.

Often have we heard people say "I water my plants every day and still they don't seem to do right".

And right here we might say that a little water everyday is *not* the thing.

The following method has been recommended by the writer to many a purchaser of palms, ferns and other house plants and has always proven satisfactory.

Let a plant get good and dry, then put into a larger recepticle which contains enough water to more than cover the pot with water and let it stand there for at least half an hour.

In this way the whole ball of soil in which the plant is growing becomes thoroughly saturated and will then need no watering for several days. If the room is very warm two such soakings in a week will suffice.

By watering a little every day the center of the soil around the plant does not get wet, gradually getting powder dry which in time will lessen the action of those roots and thus fail to produce a healthy growth. Another great mistake made by most amateurs is that they mostly use pots which are too large in order to obtain the best results.

Start your plants in small pots and not until this pot is full of healthy active roots is it advisable to transfer them into the next larger size. It may seem to many that it hardly seems profitable, but as plant life is not any too active during the winter months the new soil added by shifting will greatly benefit them.

To wash the leaves of plants with luke-warm soap water once a week will firstly rid and keep away red spider, scale and all the other kinds of insects and secondly give the plant a better chance to breathe through the clean leaves; for to keep the leaves clean is identical with keeping the skin on a person's body in a sanitary condition.

Should you have one or more plants which you think a great deal of which do not seem to grow just right it is advisable to have a practical florist look them over; that's his line of business and just by looking at them he can usually tell you the trouble at once.

There is still time to plant various kinds of bulbs out doors. Ask questions.

WINDOW BOXES

If an indoor window box is decided upon, a good depth for it is about 8 inches. The bottom of the box should be covered with stones and broken pottery for drainage. This should be covered with a layer of moss to prevent the soil from working down and clogging the drainage spaces. The drainage and moss should take up together about 2 inches. The greater the body of soil above the moss the more uniformly moist it may be kept. The soil should fail to fill the box by from 1½ to 2 inches.

The indoor window box should be as long as the window is wide, and to get as much light as possible it should be level with the window sill. It may be placed either on brackets, a table, or legs permanently fastened to it. A hole or holes should be provided in the bottom of the box and a drip pan should be placed beneath to catch drainage water.

The top of the soil should be allowed to become dry occasionally. The results of watering should be closely observed and the supply regulated according to needs. Watering may be necessary in sunshiny weather, especially toward spring, every day or at least every other day. In cloudy and midwinter weather it will not be necessary to water more often than once a week. In general it is better to water lightly and frequently than heavily and infrequently, although just the reverse is considered best when watering is done out of doors in summer.

PLANTS FOR THE WINDOW BOXES

Only plants of the same general character should be placed in window boxes, since plants of different kinds require different treatment. Begonias are about the only plants that may be expected to flower in a window box. For the most part foliage alone must be depended upon as the contribution of the indoor plants to the attractiveness of the room. Among the plants which may be grown for foliage for window boxes are ferns, geraniums, Kenilworth ivy, smilax, and aspidistra. The latter plant is especially valuable as a window box plant as it will thrive in spite of considerable neglect, drought, and dust. Direct sunlight also is not required by this adaptable plant.

Marketing Ideas

(Continued from page 34)

that in 1914 paid its members one and one-fourth millions of dollars.

From this splendid example, immense organizations have sprung up and prospered all over the Pacific Coast. They are today, and have been for years, teaching the world lessons in marketing. The result of what? Production? No! Salesmanship? No; the direct result of organization, which made it possible to hire competent salesmen to market all that could be produced and at a profit to the grower.

The Department of Agriculture at Washington may spend its entire appropriation annually for the next ten years, and without organization, will accomplish nothing for the fruit grower, and they are coming to realize this fact keenly. The State of Michigan can produce a greater variety of good fruit than any state in the Middle West, and they get the lowest average price. There's a reason. It is not a lack of markets, for markets, and good markets too, surround it. The reason is this:

There is not a solid co-operative Fruit Association in the State, never has been, and I question if there ever will be. The Department of Markets, of the Michigan Agricultural College, undertook to furnish state inspection this year, and, after scores of sleepless nights, they learned the first requisite was *organization*. They found one at Paw Paw that showed signs of living through the season, and the Department was permitted to practice on it and did furnish a certificate of inspection on twenty-four cars that sold at practically the same price as the uninspected, but the point is in favor of Organization.

Why don't Fruit Growers organize? Sometimes they do, but more often they do not; especially in the Middle West and in the East. *Why*? Are they fully satisfied with their own efforts? No; usually, no.

In my opinion the lack of organization is on account of one of the two following reasons: For the right material, with which to build a good co-operative Fruit Growers Organization, you must have either growers who do not know enough to market their crops, (who know it themselves and are not too proud to admit that they do not know how to market successfully), or, you must have growers who know enough to realize that their crops can be marketed better by some specialist than they can market it themselves; growers who are not too proud to admit it. If you have both classes, you might succeed.

Successful marketing does not consist, as is insanely imagined too often, in eliminating the middleman. You *can not* dispense with his services unless you are able to supply his place with your own agent, but, through organization, you can regulate the middleman and get the benefit of his selling agency and his capital in distributing your crops. But, to interest these middlemen, you must have an organization worthy of their attention. Then, if you can put up an honest pack of quality fruit, your middleman will gladly invest his funds in your crop.

There are two ordinary words "ORGANIZE" and "STANDARDIZE" that will solve the marketing problem, and without the former you can stand little show of accomplishing the latter. When you have done all this, you will be ready for the next chapter.

Earnestly yours,
F. Kern, Mgr.

Home Gardening Hints

It may not be too late when this paper reaches our readers to take advantages of these very useful suggestions sent out by the office of information of the U. S. Dept. of Agriculture.

Preparing Flowers and Shrubs for Winter

Steps to be taken at this season (fall) for placing the flower garden in shape for winter will vary with the kinds of plants grown and the latitude, say specialists of the U. S. Department of Agriculture. In the case of perennials, which die down to the ground but which should live through the winter and send up shoots again on the advent of warm weather, the roots should be well mulched with manure 3 or 4 inches deep as soon as the ground freezes. In this group are included such plants as peonies, larkspur, hollyhock, columbines, iris, paltycodones, and perennial poppies.

Leaves raked off the lawn now may be piled in some out-of-the-way place and will give a supply of leaf mold for next year or the year after. They may be used to cover plants in the garden, although clean straw is better.

Onions that are exposed to the weather after pulling become rough and unclean in appearance and do not bring as much on the market as those that are kept dry.

Trees and shrubs may be set in autumn, but do better if set in the spring.

Propagating Roses by Fall Cuttings

Climbing roses are propagated mostly by hardwood cuttings made in the fall, many cut flower roses may be propagated in the same way.

Hardwood cuttings are taken from the dormant wood of winter, while softwood, or greenwood, cuttings are taken when the plants are in active growth. To make a hardwood cutting, good strong, well-ripened shoots of the past summer's growth should be selected. These are better if cut between the time the leaves fall and freezing weather. If left until after cold weather there is danger of injury from freezing. They should be cut into pieces of 5 or 6 inches, with the upper cut just above a bud, and should be tied in bundles with raffia or with string that does not rot easily if exposed to dampness. After labeling plainly they should be buried in moist sand, tops down, and placed in a cool cellar or buried in the open ground below danger of frost. They should be planted in the open ground in the spring about or a little before corn-planting time, so that one or two eyes, or not over one inch of the cutting is above ground, which will leave 4 or 5 inches in the ground. Care must be taken not to injure the calluses that have formed while the cuttings were buried. Sometimes better results are obtained by planting in partial shade.

Frequently cuttings made in winter or early spring do nearly as well as those made in the fall, but in the North there is always danger of the wood being injured during the winter.

U. S. Dept. of Agriculture.

We answer questions.

Fall Measures to Combat Rose Diseases

Rose gardeners should take advantage of the fall season, say specialists of the U. S. Department of Agriculture, to make their plants as free as possible from disease by methods that can not well be followed during the growing season. It is true in general that whatever the disease, the affected portions of the plants should be cut out in the fall and the shortened bushes sprayed. It is assumed, however, that spraying will not have been delayed until fall, but will have been carried on as a control measure at frequent intervals since spring. The diseased wood removed in the fall, together with the old leaves and debris under bushes, should be burned. In case of attacks by rusts, canker, and leaf spots, the diseased wood or leaves should be removed and burned even during the growing season.

For powdery mildew, the control sprayings for the summer spores should be with lime-sulphur or potassium sulphide. After cutting back in the fall, the plants should be sprayed with lime-sulphur or strong Bordeaux mixture. The control sprayings for rusts should be ammoniacal copper carbonate. The fall spraying should be with a strong Bordeaux mixture. For leaf-spot, leaf-blight, and anthracnose, the control sprays may be either Bordeaux mixture or ammoniacal copper carbonate, and the fall spraying should be with the former.

Leaf Blotch

Leaf blotch, also known as black-spot, is a common and very injurious disease. The first symptoms are the appearance of irregularly shaped blackish spots on the upper surface of nearly full-grown leaves. In this stage the trouble may be controlled by several sprayings with ammoniacal copper carbonate or Bordeaux mixture, but if these precautions are not taken another stage of the fungus develops in the same spots. The fungus in this later stage lives over the winter on fallen leaves and sets up a new infection in the spring which can only be prevented by raking up and burning the fallen leaves and spraying the dormant bushes with strong Bordeaux mixture.

Another disease to which roses are subject is canker, which starts with the appearance of small reddish patches on the green parts, generally of 1-year-old growth. Such infected areas may increase until the entire stem is surrounded and may extend for several inches along the branch. The only advice to be given is to cut away rigorously all diseased branches, and it may be necessary to cut back entire bushes if badly infected. Cover the exposed surfaces made by this cutting with paint or tar. This diseased material must be burned and the dormant bushes sprayed with strong Bordeaux mixture in both the autumn and early spring.

U. S. Dept. of Agriculture

A Riddle?

The following extract from a letter recently received is not clear, perhaps it is a riddle. Who can tell us?

"O say, you remember the Tail End I was to get at the State Fair? O say, that Tail End was so long that I cut off two pieces and gave a piece to each of the others to make the tail ends all the same."

Wisconsin Horticulture

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Secretary W. S. H. S., Madison, Wis.

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Remit by Postal or Express Money Order. A dollar bill may be sent safely if wrapped or attached to a card, and pays for two years. Personal checks accepted.

Postage stamps not accepted.

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Annual Membership..... $ .50
Life Membership..... 5.00
Remit to Secretary W. S. H. S., Madison, Wis.

Come

A preliminary program for the Annual Convention appears in this issue. It has been impossible to complete the program but be assured the final announcement which will be published in the December number will be full and complete. The finished program will provide something for everyone and a great deal for most everyone! Amateur and professional horticulture hold equal places. The convention is for you. Come.

ANNOUNCEMENT

Annual Convention, Assembly Chamber
State Capitol, Madison
Tue., Wed., & Thur., Dec. 12, 13 & 14, 1916

While it is impracticable to present a complete program at this time the following descriptive outline, which will be followed closely in the final program, will give an idea of what may be expected. In the final round-up there will be more rather than less than is here given.

Tuesday Forenoon, December 12th

10 o'clock

Opening Address—By somebody big enough for the job.

Reception of delegates from Minnesota, Iowa, Northern Illinois, Illinois Stare and probably Indiana Societies.

At this stage we introduce our guests, bid them welcome and enroll them as honorary members.

PESTS

(Meaning the discussion of insects and diseases that affect plants.)

Profs. R. H. Roberts, G. W. Kiett or R. A. Vaughn, H. F. Wilson and probably S. B. Fracker.

Mr. Roberts ought to tell us about his very successful spraying demonstrations for the control of scab; Mr. Kiett has been studying shot-hole fungus for two years and has no doubt learned something that we ought to know; Prof. Wilson, Chief of the Department of Entomology at the Agricultural College has a message for us about "Wormy Apples."

Tuesday Afternoon

2:00 o'clock

Remarks by Dr. E. D. Ball, State Entomologist who succeeds Prof. J. G. Sanders

(Just a chance to get acquainted.)

Frank Merle Edwards, Madison Landscape Architect will present the topic, How to Beautify Your Home Grounds, a subject oft interest to every home owner or prospective home owner.

Mr. Edwards will have a full hour and his remarks will be illustrated.

TAKING AN ORCHARD CENSUS, A. A. ASBAHR.

Many of our members will recall a khaki-colored streak on a motor-cycle flashing across the land-scape last summer, stopping here and there at an orchard, like, and yet unlike, a humming bird sipping honey. That was Asbahr taking an orchard census. He will tell us about it.

Tuesday Evening

Students Speaking Contest: An Annual Event

Competition open to all students in the long courses in agriculture. From all who enter Prof. J. G. Moore will select ten who will compete for prizes of $25.00, $15.00 & $10.00

Papers limited to ten minutes.

Wednesday Forenoon
9:30 o'clock

Business Session from 9:30 to 10:30 including reports by different officers and committees and the election of officers and Executive Committee. We will then discuss,:—

Dust Control, Sometimes called the Dust Spray. This will be a "Round" Table discussion led by some member who has had experience.

Wednesday Afternoon
2:00 o'clock

Up to this point the preparation of the preliminary program has been easy, for all whose names appear have "accepted service," but from this point it begins to get hazy. Some who have been asked to serve have accepted gracefully, some answer faintly, some balk, some pull back and some refuse point blank. Out of all of it will come something like this:

Four or more papers by professional florists each presenting some topic of practical value to amateurs.

Mrs. C. O. Strong of West Allis and Mrs. G. W. Moore of East Milwaukee will each tell about Community Work in gardening in small communities.

Mr. F. Kern will talk on Marketing the Michigan Fruit Crop.

Prof. J. G. Moore has a message the subject of which he will announce later.

Wm. Toole Sr. will also bring a message.

C. M. Secker of Mather and Mrs. S. H. Whittlesey of Cranmoor will talk about Cranberries.

Papers by the four visiting delegates; a "Round Table" discussion of State Fair matters and discussions on several other topics of interest to all both amateur and professional members.

All in all it will be somewhat difficult to find time for all the good things but in some way it will be done. **BE PREPARED.**

PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Dec. 12, 13, 14, 1916.

	1st Pre.	2d Pre.	3d Pre.	4th Pre.
1. Best collection of apples, not less than 15 varieties	$10 00	$6 00	$4 00	$2 00
2. Best 5 plates (5 varieties) commercial apples for Wisconsin	5 00	3 00	2 00	1 00

Who in Wisconsin makes the best apple pies? After Wednesday of Convention week we will know for the judge will have awarded the prize by that time.

McKAY NURSERY COMPANY

PARDEEVILLE - WISCONSIN

Nursery Stock of Quality for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds.

Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

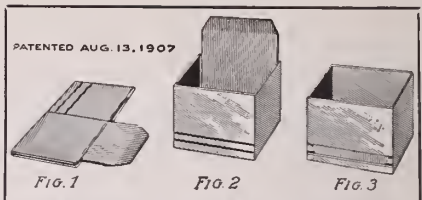
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wisconsin

3.	Best Plate Ben Davis	1 00	75	50	25
4.	Best Plate Dudley	1 00	75	50	25
5.	Best Plate Fameuse	1 00	75	50	25
6.	Best Plate Gano	1 00	75	50	25
7.	Best Plate Gem	1 00	75	50	25
8.	Best Plate Gideon	1 00	75	50	25
9.	Best Plate Golden Russett	1 00	75	50	25
10.	Best Plate Grimes Golden	1 00	75	50	25
11.	Best Plate Jonathan	1 00	75	50	25
12.	Best Plate King	1 00	75	50	25
13.	Best Plate Maiden Blush	1 00	75	50	25
14.	Best Plate Malinda	1 00	75	50	25
15.	Best Plate McIntosh	1 00	75	50	25
16.	Best Plate McMahan	1 00	75	50	25
17.	Best Plate Newell	1 00	75	50	25
18.	Best Plate Northern Spy	1 00	75	50	25
19.	Best Plate Northwestern Greening	1 00	75	50	25
20.	Best Plate Patten	1 00	75	50	25
21.	Best Plate Pewaukee	1 00	75	50	25
22.	Best Plate Plumb Cider	1 00	75	50	25
23.	Best Plate Salome	1 00	75	50	25
24.	Best Plate Seek-no-Further	1 00	75	50	25
25.	Best Plate Scott Winter	1 00	75	50	25
26.	Best Plate Tolman	1 00	75	50	25
27.	Best Plate Twenty Ounce	1 00	75	50	25
28.	Best Plate Utter	1 00	75	50	25
29.	Best Plate Wagener	1 00	75	50	25
30.	Best Plate Wealthy	1 00	75	50	25
31.	Best Plate Windsor	1 00	75	50	25
32.	Best Plate Wolf River	1 00	75	50	25
33.	Best Plate York Imperial	1 00	75	50	25
34.	Best peck of each of the following varieties: Dudley, Fameuse Gano, Golden Russet, Grimes Golden, Jonathan, King, McIntosh, McMahan, N. W. Greening, Tolman, Wealthy, Windsor and Wolf River	$2 00	$1 00	$0 75	
35.	Best bushel of each of the following varieties to be shown in trays: McIntosh, Northwestern, Wealthy, Tolman, Wolf River	$4 00	$3 00	$2 00	
36.	Best Exhibit Pears	1 00	75	50	
37.	Best Exhibit Crabs	1 00	75	50	
38.	Best Seedling Apple	2 00	1 00	50	

VEGETABLES.

	1st Pre.	2d Pre.	3d Pre.
Best collection, not less than 10 entries	$5 00	$3 00	$2 00
1. Best 6 Blood Turnip Beets	1 00	75	50
2. Best 3 Round Turnips	1 00	75	50
3. Best 3 Rutabagas	1 00	75	50



BERRY BOXES

Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Co.

Dept. D, Cumberland Wis.

Growing Miscellaneous Plants in the House

Throughout the winter the housewife, if she cares to take the necessary trouble, may have compensation for the lack of her outdoor garden by growing various plant in window boxes or pots in the house. For the most part she will have to content herself with foliage, though she may be able to coax a few flowers to bloom. The following suggestions for preparations for the indoor garden and for caring for it later are made by specialists of the U. S. Department of Agriculture.

Arrangements are being made for an extensive exhibit of apple products at the Convention, probably more than "57" varieties.

Meet me at the Convention.

4.	Best 6 Chantenay Carrots	1 00	75	50
5.	Best 6 Shorn Horn Carrots	1 00	75	50
6.	Best 6 Salsify	1 00	75	50
7.	Best 3 Winter Cabbage	1 00	75	50
8.	Best 3 Red Cabbage	1 00	75	50
9.	Best 6 Ears Pop Corn	1 00	75	50
10.	Best 6 Red Onions	1 00	75	50
11.	Best 6 Yellow Danvers Onions	1 00	75	50
12.	Best 6 White Onions	1 00	75	50
13.	Best 6 Gibraltar Onions	1 00	75	50
14.	Best 6 Winter Radishes	1 00	75	50
15.	Best 6 Parsnips	1 00	75	50
16.	Best 6 Peppers	1 00	75	50

Cranberries.

Twenty-five dollars in premiums will be awarded for exhibits of Cranberries. The premium list is being arranged by the Cranberry Growers Association and will be published in December WISCONSIN HORTICULTURE. For particulars write J. W. Fitch, Sec., Cranmoor, Wis.

APPLE PIE!

For the best apple pie $5 00

RULES OF ENTRY.

1. All entries must be filed with the secretary before 5 P. M., Tues, December 12th.
2. Exhibits must be arranged ready for judges by 9 A. M., Wednesday, December 13th.
3. Four apples constitute a plate, no more, no less.
4. Separate samples must be furnished for each entry, except for No. 1, which may include all entries.
5. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary W. S. H. S.*, Madison, Wisconsin.

STUDENTS' JUDGING CONTEST.

Twenty dollars in prizes will be awarded to students in the long and middle courses, Horticultural Department, College of Agriculture, for the best scores in identifying and judging varieties of fruit on exhibit.

Under rules prepared by Prof. J. G. Moore.

Final awards to be decided by a judge appointed by the president.

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Co.

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Quality Stock

Strawberries

Native Plum Apple Small Fruits

WISCONSIN GROWN

for Wisconsin Planters. Read our Price List before you buy, and save money.

62nd Year

Kellogg's Nurseries

Box 77, Janesville, Wis.

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON

SHEBOYGAN, WISCONSIN

PLANTS FROM CHINA

The third expedition into China to discover new plants suitable for introduction into the United States has been completed by F. N. Meyer, plant explorer of the U. S. Department of Agriculture, who has just returned to Washington after a three-year trip in the Far East. As a result of this expedition through the center of China, and two previous explorations of similar duration covering extremely cold Manchurian regions and the arid regions of Chinese Turkestan, there have been sent to American for planting and testing for commercial adaptability, seeds, roots, or cuttings of some 3,000 food and forage plants, flowers, ornamental shrubs and vines, shade and timber trees. The previous expeditions brought to America specimens of many cold-resistant and dry-land grains, sorghums, soy beans, alfalfas, and forage plants, and also certain semitropical plants, such as the bamboo, which are now under experimenation to determine their usefulness for the extreme South.

Of the many specimens forwarded to this country during the last expedition, the specialists regard as most significant the jujube, a fruit new to this country, which may be suitable for use in the Southwest; a wild peach resistant to alkali, cold, and drought, the root system of which offers great possibilities as a grafting host; certain Chinese persimmons larger than any hitherto known in this country; a number of aquatic food roots and vegetables which offer promising possibilities for the utilization of swamp land; some thirty varieties of vegetable and timber bamboos; and a number of Chinese vegetables, bush and climber roses, shrubs and trees.

Of scientific rather than commercial interest is the discovery on this expedition, near Hangchau, of a hickory tree, the first found in China. The existence of this tree, together with the facts that the sassafras and tulip trees are common in both countries and the Chinese tea box tree is closely related to the sweet gum of the South, confirms the fact that the flora of the southeastern United States and that of sections of China are closely related. Another discovery of botanical interest was the finding in a remote and hitherto unvisited valley in Tibet of a hazel tree 100 feet high—a surprising departure from the hazel bush. Elsewhere English walnuts were discovered in a wild state; and the discovery of the wild peach is regarded as significant because it seems to establish that the peach may have been a native of China rather than of Persia, to which its origin has been ascribed. The discoveries of native and hardy oranges and other citrus fruits, a number of which have been brought to this country for breeding work, give added evidence that China was the home of the orange, which was introduced into other countries probably by early Portuguese travelers. Similarly many plants commonly ascribed to other countries, such as the wistaria, chrysanthemum, lilac, azalea, and certain peonies and rambler roses, have been developed by the Chinese, although, because they reach Caucasian use through other nearby nations, their Chinese origin often has been overlooked.

The first or experimental exploration for new plants in China in 1905 was undertaken by the Department because the wide range of climate, rainfall, elevation, and soil conditions in that immense country gave promise that the Chinese, who had been farming successfully in some sections for about 4,000 years, might have found solutions for special difficulties which confronted American farmers in regions of excessive cold, or drought, or alkaline or swampy soils.

The investigators quickly found that China also offered a particularly fertile for plant introduction work because for many centuries the Chinese farmers, in a crude way, had been selecting seeds and developing improved varieties now ready for commercial use in the United States. In many cases all that is needed is to bring the seed or plant to this country and use it, although in other cases, inasmuch as Chinese methods rarely produce pure strains, some further seed or plant selection is necessary to obtain constant varieties.

To locate these special varieties, however, it is necessary for the explorers to visit not merely individual villages but even to study single farms. There are no seed stores in China and no mechanism for extending the use of improved varieties. Superior varieties grown on one farm often are not used on adjoining farms, and are unheard of ten miles away. The farmer who develops an improved variety guards it jealously and gives seeds or cuttings or scions only to his immediate relatives. In the case of fruits, the Chinese farmer is averse to spraying or other treatment for diseases, largely because his ancestors have never done this, and the adoption of modern methods would be considered irreverent. As a result, excellent varieties

which are traditional or mentioned in Chinese literature have either disappeared completely, or are to be found only on isolated farms. A striking example of this is the fact that the section around Shanghai even forty years ago was famous for a special kind of peach, although today this variety has completely disappeared.

In the last trip the explorer penetrated through the center of China 1,500 miles on foot to the borders of Tibet and returned to the coast by a different route. On this expedition he covered territory the agricultural conditions of which are very similar to those of the southern Rocky Mountain regions and portions of the Great Plains.

In this territory, the most important discovery probably was the jujube tree, which bears a heavy crop of a brownish fruit, which is delicious when fresh and when dried offers a confection very similar in taste to the Persian date. This tree is of particular interest to the department because it can withstand cold and drought and neglect. The section in which it is productive in China is a semiarid belt where winter temperatures do not go much below zero Fahrenheit. This indicates that it would be of particular value to Texas, California, New Mexico, Arizona, southern Utah, and perhaps even farther north. Already, several thousand seedlings have been grown at the Plant Introduction Garden at Chico, California, from the specimens sent to this country, and some of these have borne desirable fruit, which confirms the experimenters in their belief that this tree may contribute a new fruit industry to the sections indicated.

The wild peach discovered in China, and now brought to this country for the first time, is considered of great interest although its fruit is not desirable. Investigation in its native habitat showed that the roots of this plant are not as susceptible as our native peach to alkali in the soil, while it will withstand cold and does not require much moisture. Experiments are under way, therefore, to determine the usefulness of the rootstock of this peach for grafting with different hardy American varieties. If success is achieved, the specialists believe that they can develop peach trees which will make possible the raising of peaches in the Southwestern or alkaline sections, and at the same time offer possibilities of peach cultivation in many droughty and cold regions, and possibly even into portions of Iowa beyond the northern edge of our present peach region.

Of special interest also are the collections of aquatic food plants secured in the recent expeditions. These include water chestnuts, water nuts, and a number of aquatic bulbs, as well as the water bamboo. The Chinese, the explorer found, have mastered through centuries of experiments the process of using swamp lands for the raising of food crops, and their success is believed to point to commercial possibilities for some of our swamp regions where reclamation by drainage is not practicable. Whether the American farmer would ever be willing, however, as a commercial enterprise, to grow crops which call for cultivation in water waist-deep is, the specialists admit, open to question.

The kauba, sometimes called wild rice or water bamboo, now to be made the subject of experiment, is a vegetable in taste somewhat between grass and asparagus. The swollen stalks of the plant are eaten much like our asparagus. The ordinary bamboo, contrary to the prevailing opinion, is not an aquatic plant, and for successful cultivation calls for fertile and well-drained soil.

In selecting Chinese vegetables for introduction the explorer was greatly limited by the fact that many articles favored by Mongolian palates would be unpleasant to Caucasians. He has sent over, therefore, only those things which promise to add valuable vegetables or fruits to the American table, and also which fit in with a general plan for the introduction of certain food crops which will find a ready market among our Chinese populations. The Chinese, in many cases, are importing large quantities of favorite native foods in canned or dried form from China because they find difficulty in getting them in a fresh state in our larger cities. Some of the vegetables brought over which promise to find a dual market are a number of varieties of vegetable bamboo and improved varieties of pe tsai, the odorless Chinese cabbage, some kinds of which already are on sale as "celery cabbage" in American markets. This cabbage is suitable for cooking or for cold slaw and can be grown wherever ordinary cabbage is raised. A vegetable novelty now under experiment is a Chinese radish with a root as large as a child's head. This is somewhat

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Do not go into the business of growing drug herbs hurriedly. While there is a good demand for some of these, it is not likely that this demand will be permanent, and besides the cost of preparing many of the herbs is prohibitive.

coarser and inferior in flavor to the small radish, though the Chinese cook it much like turnips, and also pickel it in strips in brine for use as a relish.

This and other explorations have given to this country a Chinese cherry, very successful in California because of its early maturity; and a number of varieties of wild pears and apples, wild almonds, and hardy citrus fruits which offer possibilities for hybridization with American varities.

The explorer also brought over specimens of the Chinese pistache tree, which it is hoped will give the United States a new and valuable tree for the adornment of city avenues in Georgia, Alabama, the Carolinas, Florida, Texas, California, Arizona, and Oregon. Plantings were also secured on this trip of a Chinese white pine tree remarkable for its white bark. One of these specimens which Mr. Meyer brought has been planted on the grave of the late Minister to China, W. W. Rockhill, who once expressed in the explorer's hearing a wish that this be done. Because of its drought-resisting qualities, this strikingly ornamental tree offers possibilities for the beautification of parks and grounds in Arizona, Texas, New Mexico and California.

Especial attention was given on this trip to investigations of chestnut blight, which was found by the explorer first in China and later on in Japan. In the eastern United States this blight appears in virulent form and is exterminating our beloved chestnut. The explorer, however, found Chinese chestnut trees which were to some degree blight resistant. Many of these trees had suffered from the disease but had apparently recovered from severe attacks and succeeded in covering the old scars with new wood.

To lovers of flowers the new Chinese rose known as the *Rosa xanthina* should be of special interest, particularly in view of the fact that there is at present a great demand for yellow roses. This bush has small, light yellow flowers, but its great quality is its hardiness which will enable it to flourish in the North even as far as Canada. The chief promise of this rose, however, lies in the fact that it will in all probability lead to the production of new hardy types of yellow roses adapted to cultivation in America. It may produce varieties which will not drop their leaves like our Persian yellow roses do and yield varieties with larger and more showy flowers. In addition, the explorer found a number of new ramblei roses, particularly certain yellow ramblers which, if locally successful, will meet a demand for a climbing rose with a flower differing in shade from the crimson and pink flowers of the well-known rambler varieties.

Cabbage keeps best in a cool cellar. A good plan is to hang the heads face down so all surplus water will drain off.

Onions should be stored in a cool, airy place. They are best put on flat shelves not over six or eight inches deep. Do not allow them to freeze.

PLANTING BULBS OUTDOORS.

The first frost which will put an end to the development of many of the flowers in the home garden should be the signal, say specialists of the U. S. Department of Agriculture, for the planting of bulbs of the tulip, hyacinth, and narcissus, which are to furnish the first touch of color for the outdoor garden in the spring. The bulbs may be put in even before the appearance of the first frost, but better not util after.

Tulips and hyacinths should be placed in beds in light, rich soil that has been dug to a depth of at least 10 inches. They should be set 4 inches deep and 5 inches apart. If the narcissus and its variants—jonquils and daffodils—are to be planted in beds, the soil should be prepared similarly and the bulbs should be set 10 inches apart and 5 inches deep.

A pleasing variation from planting the narcissus type of early spring-blooming bulbs formally in beds is to plant them in scattered groups on the open lawn or in the edge of shrubbery. A good plan in arranging for the location of the flowers on the lawn is to broadcast the bulbs and plant them where they fall. A small hole 5 or 6 inches deep should be made and the bulb inserted, pointed end up. The hole should then be pressed full of soil. Often the narcissus, planted in this way, will become naturalized on the lawn and will continue to grow there indefinitely, coming up year after year, if the tops are left uncut until near the first of June. Where the lawn is kept cut the tops of the plants are cut off before the bulb has a chance to develop for the next year's blooming, though may survive a year or two but become weak and poor after the first or second year. Crocus bulbs may be planted in the lawn in the same way, but the top should not be deeper than twice the length of the bulb.

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A Brief Communication from Rusk County

"We had a very fine crop of strawberries this year, two hundred 16 qt. crates from one-half acre, Warfield and Dunlap."

"Lost two fine N. W. Greenings, tops froze all dead this spring; they were out three years. Dig them up.

B. T. D.

Cannas and Kindred Plants

Plants such as cannas, dahlias, gladiolas, and Caladiums should have their roots dug up and stored in a cellar where the temperature will not rise above 60° nor fall below 50° Fahrenheit. The root clumps of cannas and dahlias should not be shaken free of soil. These plants with the soil naturally adhering to them should be placed on racks or in slat boxes so that air may circulate among them. It is important that the roots do not become too warm or dry and that no frost shall reach them. The bulbs of gladiolas, Caladiums and tuberoses, on the other hand, should be carefully cleaned of soil and dried in the open air for a day or two. They may then be stored in the cellar.

There is still plenty of time to plant hyacinths, daffodils, etc., for forcing in the living-room this winter.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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The National Congress of Horticulture

Prof. Hansen of South Dakota is responsible for the name. It's a high sounding name, euphonious, and should lend much to the success of the enterprise.

The responsibility for the meeting which led to the founding of the Congress rests with Prof. W. H. Hutt of North Carolina and E. R. Lake of the Division of Pomology at Washington, president and secretary respectively of the American Pomological Society.

The object of the meeting as expressed in the call and later in the talks and discussions was the co-ordination of all the various forces now working for the advancement and uplift of horticulture in this country.

The meeting was held in Washington, D. C., Nov. 16th to 18th and was attended by delegates from twelve states including three from the middle west, Secretary A. W. Latham, of the Minnesota Society, Prof. N. E. Hansen of South Dakota, and the secretary of the Wisconsin society. In addition, our President, N. A. Rasmussen of Oshkosh who has taken a keen interest in the movement attended on his own account and at his own expense.

Two days were spent in deliberations and discussion and all were agreed that such a movement as here indicated would mean as much or more to horticultural interests than does the National Farmer's Congress to general farming.

The city gardener must economize on space. Tomatoes grown like these require much time in training but give the maximum of yield for the minimum of space. A corner of Mr. H. N. Hobart's garden Oshkosh, Sept. 1916.

ANNUAL CONVENTION DEC. 12--14

The third day was devoted to framing a Constitution and By-Laws which will be submitted to all who were present at the meeting and possibly published in different horticultural journals. A tentative organization was formed and officers elected as follows: President, W. N. Hutt, North Carolina, Professor of Horticulture in the College of Agriculture; Vice President, A. W. Latham, Minnesota, Secretary Minnesota Horticultural Society; Secretary, E. R. Lake, Washington, Secretary American Pomological Society, and L. B. Magid, Orchardist, Atlanta, Ga., Treasurer. These officers will serve only until the first regular meeting is called and the Constitution and By-Laws adopted. Under the proposed constitution membership in the Congress will consist of members of all national, district and state horticultural societies and associations that apply for membership as well as individuals who may not be connected with any such organization.

The voting power rests with delegates selected by the various societies. The fee for individual membership will probably be fixed at one dollar and the association membership at $25 to $100, which fee will make all the members of such association, automatically, members of the Congress.

Primarily the Congress will be commercial in spirit.

The promotion of legislation in the interests of horticulture was the foremost thought in the minds of the majority of those participating in the movement. It was shown by Prof. Hutt, who has compiled statistics on the subject, that there are above fifty thousand persons in this country who are members of state horticultural societies. Another fifty thousand may easily be counted as members of national organizations such as the Florists, Nurserymen, Nut Growers, etc.

If the strictly commercial organizations such as the Pacific Coast Apple Growers and the Citrus Fruit Associations unite, it will mean at least fifty thousand more. Leaving out of account individual members this means one hundred thousand members all interested in a common cause and united for a common purpose. A high moral standard is assured by the character of the organizations which will be affiliated.

One of the prominent men of Washington, whose vocation is law and avocation horticulture said: "I can conceive of no movement holding greater possibilities for the advancement of horticultural interests than this one."

The movement is inaugurated under most favorable circumstances and the writer believes it will succeed.

Appetizers for the Winter Months

J. T. Raine

Many of the people living on the farm or in the small village are content to go without "green stuff" on their table from the middle of Nov. or the 1st of Dec. until March, when with a very little trouble plenty of fresh vegetables might be had. How often the housewife sighs for a little of some fresh vegetable to break the monotony of the meal of canned vegetables and cured meat? They think that fresh vegetables are only for the people near at hand to the great forcing houses or the large cities, when a veritable garden could be maintained within their own houses supplying the table with many a dish usually considered utterly impossible at that season. The house cellar or any other cellar can, if properly handled, be made to supply plenty of the highest quality rhubarb, asparagus, chicory, seakale, and other greens.

How welcome in the spring is the first rhubarb pie, especially if the apple crop the preceding year has been a failure and the store of fresh fruit long been depleted? The wise man of the house sees to it that he may be served with this delicacy from Christmas time on until the outdoor crop is over. Ask the lover of the tender asparagus shoots and he will tell you that the season is entirely too short. You say canned asparagus but the canned material cannot compare in any way with the fresh vegetable. Yet with a little judicious use of the cellar the asparagus season can be lengthened by several months and obtained at a time when other fresh goods are hard to get.

In the forcing of most of these materials light is not an essential, but in fact quite a detriment to the production of crisp juicy stalks. The essentials for forcing rhubarb are a dark place with little or no light, a temperature of 40 to 65 degrees although a variation of 40 to 85 may occur, and moisture in not too large an amount. The cellar is almost an ideal place for the

(Continued on page 60)

CRANBERRY NOTES

By J. W. FITCH

The sum of $25.00 having been appropriated by the Horticultural Society for premiums on cranberry exhibits it seemed proper for the association to supplement this somewhat in order to make a more complete award and make it worth while for growers to compete. In view of the fact that it may be necessary to go before the legislature and ask for help in putting the cranberry experiment station on a more substantial and permanent basis, it is hoped that growers generally will make an extra endeavor to make the exhibit a good one, that the members of the legislature who may attend the meeting can see the possibilities of the business, for people generally are used to the smaller berries, and when the larger ones are seen a great deal of surprise is always manifested. It should take advantage of every possible chance to educate the public as to the importance of the industry, and a good display of the cooked fruit will have far-reaching effect since there are no more appetizing cooking desserts than well served cranberries.

The past season should be quite a satisfactory one to growers, since the prices obtained are very good, especially so since for quite a time it seemed as if prices were bound to be the lowest in years, but as a matter of fact if the general average be noted it will be seen that cranberry prices keep up as well or better than most other products. The keeping quality of the Wisconsin crop seems to be very fine this year, which would seem to indicate that dry weather during the growing season make for sound keepers; also it is known that it produces more fruit buds for the next year's crop, so we may look for a good crop next year. President Searls' remarks at the August meeting as to winter flooding and early drainage in the spring, should be recalled by growers. Mr. Searls said that the longer we could keep them out of water the better, meaning, to postpone the winter flood as long as possible, and to take it off as soon as possible in April, only reflowing in case of extremely warm weather in April which might start growth. The cranberry vine must be covered in the winter either with ice or snow to prevent winter killing, which spoils the crop for two years. Vines which stick out of the ice seem to kill invariably more than those not flooded at all. Cranberry growing possesses a great advantage over all other fruit growing from the fact that with a good water supply the crop is a sure one.

The 30th annual meeting of the W. S. C. G. Assn. will be held in Grand Rapids Tuesday, Jan. 2nd. and a cordial invitation is extended to all interested to attend.

MAKE CRANBERRY JELLY.

That cranberries may be disposed of in wholesale quantities in the form of jellies and jams, is an idea which has occurred to many people in the past and which has been tried to some extent, but never on a large scale.

It would be very desirable if a quantity of the cheaper, early fruit could be utilized in this way and the idea is worth thinking about—and is being thought of.

There are numerous jelly and marmalade factories engaged in putting up other fruits which find a ready sale throughout the year. Cranberries make an excellent jelly and in the marmalade form are exceedingly appetizing. The great difficulty in the past in preparing cranberries in this way has been the expensive quantity of sugar required to make them keep, but this can be obviated by putting the berries through a chemical process, which will remove a large part of the acid and needing only enough sugar to sweeten.

There is no reason why such a process is not commercially practical. It only requires capital and commercial experience to establish a business which will not only prove profitable, but which will help the cranberry market.

It seems to us that there is a better chance in this line than in the evaporating and canning experiments which have been tried in the past.

There is a market waiting for such a product. It will not have to be created as is the case with evaporated cranberries. Good salesmanship and some advertising is all that is needed for the disposal of considerable quantities of fruit when prepared in this manner. The manufacture is simple and no difficulty will be experienced in making the jellies and marmalades keep if the acid is first removed from the cranberries and enough sugar used to sweeten. It will not be necessary to resort to the use of benzoate of soda, which fact would have to be printed on the label and is objectionable to the purchaser. Sound, ripe cranberries,

(Continued on page 55)

BUY YOUR TICKET FOR

Some Common Pests of Greenhouse

By S. B. Fracker at Summer Meeting,

Professor Sanders has asked me to express to you his great regrets that he could not take part in this meeting and to tell you of the pleasure he has had in his work with you during the last six years, as well as his appreciation of your co-operation in his work. He requested me yesterday evening to talk in his place and to discuss the insects affecting ornamental plants and those found in greenhouses. I shall consider only those which the greenhouse men have actually asked about in our inspection trips and those which we know are occasionally troubling them in their greenhouse or on their ornamental shrubbery.

First, it seems advisable to go briefly into the primary principles of insect control. As most of you know, insects from the control standpoint are divided into two groups,—those with chewing mouth parts and those with sucking mouth parts. The former include caterpillars, beetles, grubworms, insects which chew the leaf tissue and which take into their stomachs the leaf material in some solid form. The other group consists of plant lice, scale insects and a few others of less importance. These insects do not eat the surface of the leaf tissue but take into their stomachs only the liquid food which consists of the sap of the plant.

On account of the difference of these two groups, it is necessary to use different control measures, and sprays are therefore divided into two kinds, the first consisting of arsenicals or stomach poisons which operate through the digestion, and the second including contact poisons which operate through the exterior of the insect.

It happens that the injurious insects with sucking mouth parts are in almost all cases smaller insects which can readily be combatted through the exterior. It is impossible, regardless of the mouth parts, to control caterpillars and beetles, as well as insects with a harder covering, with any kind of a contact insecticide. Stomach poisons are mainly forms of arsenic, or arsenicals, as these are the cheapest poisons which we can use for this purpose. The common arsenicals, as you know, are Paris green and arsenate of lead.

Arsenate of lead comes in two forms,—the powder form and the paste form, the latter consisting of water and powdered arsenate, half and half. Twice as much of the paste must be used as is needed of the powder. At the present time we are advising the use of the powder form almost entirely, both in sprays and in dry applications. The reason for this is merely a climatic one, as it is almost impossible under ordinary circumstances to keep the paste over winter. If it has an opportunity to freeze it will crystalize, and its further usefulness will be gone.

The contact insecticides in most common use are Black Leaf "40," or some other 40 per cent nicotine sulfate, and kerosene emulsion. The former is mixed with 800 to 1200 times its bulk of water and is very simple to apply. Kerosene emulsion is made with hot soapsuds and necessitates mixing the kerosene with the soap suds very carefully. Mixing kerosene and tobacco solutions together, as is sometimes done, is not necessary and it is not desirable to invest in commercial preparations of this nature.

Fumigation may also be considered as a form of contact insecticide because in this case we are using a gas which operates on the exterior of the insect, in place of a liquid. Fumigation is carried on in almost every greenhouse, in fact, in almost every commercial greenhouse in the state with which I am familiar.

Publications describing the preparation and use of these spray materials will be sent, on request, by the State Entomologist's office.

* *

INSECTS AFFECTING SHRUBBERY.

Fortunately, there are few chewing insects on the ornamental shrubs which we are commonly using in the state at present. It is seldom that any arsenical spray is needed on such shrubs as Spiraea, Dogwood, Viburnums, and others of the same nature. An exception is in the case of roses which have a full supply of slugs and caterpillars. These may be controlled by the ordinary lead arsenate spray.

White hellebore may be used in place of arsenic when one does not wish to put poison on the plant. It is not recommended more often because of the greater expense. Hellebore should be used fresh and it is sometimes

MADISON DECEMBER 12--14

Plants and Ornamental Shrubbery

Lake Geneva, August 22, 1916.

difficult to secure packages of it which have not been lying around the shelves of the drugstore for considerable periods of time.

Plant lice, on the other hand, and scale insects are rather severe on ornamental shrubs. You are all familiar with the effect of aphids on snowball, curling the tips of the leaves and badly disfiguring the plant. They also disfigure several other ornamental shrubs and are common on almost all of them, though on Spiraea and most of our shrubs they do not injure the appearance as they do on the Viburnums.

In the case of Spirea and in all cases where aphids appear on the stem of the plants and on the surface of the leaves without curling them, you can use the sprays which I have mentioned (kerosene or Black Leaf "40") in their ordinary dilutions without any difficulty. Where the leaves are curled, however, it is necessary to either dip the tip of the plant or else to spray before the leaves begin to curl. The actual and practical result of this is the fact that the snowball is not being planted as much as it has been in the past and such seems to be a desirable change. Those who grow ornamental shrubs on small city lots seldom wish to take the trouble of spraying in order to keep the insects off.

Among the flowers, asters seem to be most commonly attacked by root lice. Where it is practicable, the most satisfactory method of controlling root aphids on a plant which is not already too weakened to live is to dig out the soil around the plant and put in tobacco dust. This may be secured from most seed concerns and a great many drugstores. Pouring nicotine in liquid form around the base of the plant will kill the lice that are there at the time but it will not remain in the soil the way tobacco dust will. The latter will allow the rain to wash the nicotine out and keep washing it down on the roots.

In addition to plant lice, we have scale insects to combat on ornamental shrubbery. A "scale" consists not only of the insect but of a waxy covering which the insect secretes. You are probably familiar with oyster shell and scurfy scales on our common shrubs. Lilacs perhaps are especially likely to have oyster shell, and dogwood very commonly has a white scurfy scale. These are not particularly injurious but if they become too numerous they may be controlled by a concentrated solution of lime-sulfur in the dormant season such as is used in the control of scale insects and of plant diseases in orchards.

One scale which has received a great deal of advertising the past thirty years is the so-called San José scale. For those who are not familiar with it and mistake it for more conspicuous insects, I might say that this is the smallest scale insect which is common or of economic importance. The insect, itself, is much smaller than the head of a pin and the scale is just about that size. In the winter stage it is black and these scales pile up on the bark until they are very numerous. The dead ones peeling off often give the bark an ashy appearance.

San José scale has not yet been found at Lake Geneva although it may be discovered here at any time. The most serious infestation in the history of the state is at Kenosha where

Not all Illinois apples are good apples. There are discards from one orchard. Photographed somewhere in Illinois Oct. 1916.

TUESDAY, WEDNESDAY,

the staff of the State Entomologist's office has been working for a couple of years. There every infested tree discovered was thoroughly sprayed this last spring and it is probable that a large percentage of the scale was entirely killed in that vicinity. The scale has also been found in Milwaukee and other cities but if as much is done in the coming years as has been accomplished during the past year, it is probable that we shall greatly reduce the infestation of this very serious pest.

The host plants include all our fruit trees except the cherry, and in addition roses, Japanese Quince, dogwood, sumac and certain other shrubs. Barberry and spiraea are not attacked. Wherever this insect is suspected a sample should be sent to the State Entomologist's office and the situation will be given immediate attention.

* *

GREENHOUSE INSECTS

The most common insects affecting greenhouse plants are aphids or plant lice, and white flies. The latter are not true flies but are closely related to plant lice; they fly, however, much more freely and instead of being green in color are covered with a white mealy powder as the name indicates. Greenhouse men are all familiar with them. Greenhouses, as was said a few moments ago, however, are fumigated, especially throughout the summer season, at intervals of a week to ten days. Consequently florists have little trouble with these two groups of insects. They are kept under control by fumigation at this interval. In unfumigated greenhouses white flies often cause, on the other hand, considerable injury.

The insects which are not controlled by fumigation are caterpillars and scale insects, on palms, rubber plants and ferns. For these it is desirable to use whale oil soap in the proportion of one pound to a gallon, except with ferns which are too tender to endure soap in this strength. Almost all palms have a few scale insects but they should not be allowed to pile up in several layers on these plants and on *Ficus*. We have received leaves of the latter plant completely covered by two or three layers of the scale insects.

The common chewing insects in greenhouses are the rose leaf rollers and various other leaf rollers and leaf tiers. With one exception these may be easily controlled by lead arsenate sprays by using one pound of the powder to 50 gallons of water. This will not injure the rose foliage as Paris green may do. One caterpillar against which florists should be on their guard is what is known as the Florida fern caterpillar. It is the only insect which eats the leaves of ferns and an epidemic in the greenhouse is a difficult one to handle. So far as I know, it has entered the state but once, and I believe is not now present in that greenhouse but should it come in, as it is likely to come in on ferns at any time, the greatest care should be used to prevent its multiplication and breeding in those surroundings. The nature of the fern is such that lead arsenate colors the foliage to an undesirable extent and also the deposit of the poison on the foliage of a plant handled as much as a fern sometimes is, is somewhat dangerous. Hand-picking of the caterpillars is the most successful control measure now known.

One cause of great trouble in the greenhouse is the red spider which will iniure almost every plant. Lime-sulfur spray is a help in combatting it. Powdered sulfur has also been found very satisfactory. Water under pressure is often used with success.

This covers the principal insects injuring shrubbery and greenhouse plants in this state. There are many others of lesser importance but none which seem to require special measures for control.

Orchard and Garden

Some varieties of dahlias may be forced in the greenhouse with success.

An inch or so of sand over the root crops stored in the cellar will keep them from drying out.

Gladioli and dahlias may be stored in an ordinary potato cellar. Cannas require a warmer place. They should not be dry enough in any case to shrivel the roots.

Rose bushes may be laid down, if the ground is frozen hard, and covered with straw and boards. Cover so that no moisture can reach the foliage.

It is worth while to save a few bundles of grain to put in the yard for the brids during the winter. Birds also like suet.

It will be well to order flower and vegetable seed this year as soon as the catalogs appear, since it will be hard to get the varieties commonly grown in Europe.

THURSDAY, DECEMBER, 12--13--14

Cranberry Jelly

(Continued from page 51)

sugar and water are all the ingredients necessary and all that should be used in any case. As an expedient for using up unsound fruit, it would not prove a success, as has been demonstrated by past experiments, but if good quality fruit be used the product should prove popular and have a ready sale.

There is an astonishingly large business carried on in the making of jellies and marmalades. Some of the large manufacturers have used cranberries with good results, but no exclusive cranberry jelly plant of any size has ever been established to our knowledge. In order to be a success, it would probably be necessary to put up other fruits in connection with it to keep the plant running through the year, and in this connection we call attention to the success of local individuals who have established quite large businesses by selling "home-made" products of this kind. We have in mind one in particular, who puts up over seventy-five varieties of jellies, marmalades, preserves, pickles, etc., and finds a ready sale to the retail trade without advertising of any kind. The reputation behind the goods brings in mail orders to the capacity of the establishment, which has become known wholly through customers who have called the attention of their friends to it.

The commercial value of the phrase "made on Cape Cod from native fruits" is great and commands attention among housekeepers. The summer people carry away large quantities when they leave the Cape in the fall, and mail orders rapidly deplete the stock.

We know of another person who is experimenting with cranberries in this way, who, by putting up apple and grape jellies and marmalades, which are sold to the wholesale trade, and thus establishing a reputation for his brand, expects to be able to sell great quantities of cranberry jelly when he puts it on the market.

Cranberry growers should seek out and encourage such persons who are trying to develop a demand for cranberries other than in their raw state, as success will mean an added market and consequently better prices.

Relating to Fraudulent Exhibits

The following item from the *Rural New Yorker* of Nov. 11th came in the mail to the editor recently. The clipping was enclosed in a sealed envelope with nothing to indicate the name or purpose of the sender. While it is contrary to the principles and practices of editors to encourage anonymous correspondents, an exception is made in this case as the subject matter of the clipping is timely.

"*Any exhibitor who enters as his own, fruit grown by another will be debarred from all premiums.*"

"That statement heads the premium list of the New Jersey Horticultural Society, and it should be enforced at every fruit show by promptly firing anyone who tries to win prizes with "hired goods." There has been too much work by "ringers" who buy up fine specimens of fruit or of stock and travel from one fair to another capturing the prizes. The managers of shows where prizes are offered should go after such people with a club. They discourage the actual growers and especially the young people who are most important to any society. When these young growers see "ringers" coming in with fruit which only represents money they rightly conclude there is little use competing with a skin game and a jockey shop, and they give up exhibiting. That is the worst thing that can happen to a fair or a horticultural society, for above all things such an exhibition should be free, honest and useful. When a jockey comes in with purchased fruit and walks off with the prizes, fraud and discontent walk off with him. Our old friend Clark Allis dug out such a fraud at the fair in Batavia, N. Y. This fraud bought the fruit which he exhibited, and then had the face to swear that he produced it—when there was practically no fruit growing on his own place! That man should be shut out from all fruit shows, and sentenced to a long diet on Ben Davis apples. A fruit show should be a contest between men—not between dollars."

R. N. Y.

Farmers' Bulletin 750, Department of Agriculture, Washington, D. C., is a thirty-six page bulletin on roses for the home. This may be obtained by writing to the Division of Publications, Washington, D. C.

Wisconsin Horticulture

Published monthly by the
Wisconsin State Horticultural Society
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Official organ of the Society.

FREDERIC CRANEFIELD, Editor.
Secretary W. S. H. S., Madison, Wis.

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Remit by Postal or Express Money Order. A dollar bill may be sent safely if wrapped or attached to a card, and pays for two years. Personal checks accepted.

Postage stamps not accepted.

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Annual Membership..... $ .50
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Remit to Secretary W. S. H. S., Madison, Wis.

About the Convention

The program which appears elsewhere in this issue is the only one which will be distributed to members prior to the convention, therefore read and preserve.

The Capital Hotel will be headquarters for officers, delegates and members generally. The best part of a convention is the getting together at the hotel between sessions and after the evening sessions.

PROGRAM.

Annual Convention, Assembly Chamber, State Capitol, Madison.
Tuesday, Wednesday and Thursday, Dec. 12-13-14, 1916.
Capital Hotel, Headquarters for Officers and Delegates.

The following program may be changed in minor ways but will be offered substantially as here given:

Tuesday Forenoon, Dec. 12th
10.00 o'clock

Opening Address . . . . . *Gov. Philipp*
Reception of Delegates from Minnesota, Iowa, Northern Illinois and Illinois State Societies.
Fruits for Loam and Prairie Soils . *C. L. Richardson, Chippewa Falls*
Why do Strawberry Varieties "run out?" . . *Five minute answers By M. S. Kellogg, H. C. Christensen, Robt. J. Sampson and President Rasmussen.*
Paper . . . . . *Eugene Oestricher Secretary, Milwaukee Florists Club.*
The Failure of Test Controls in Spraying . . *G. H. Townsend*

Tuesday Afternoon
2.00 o'clock

Cooking Cranberries . . *Mrs. S. H. Whittlesey, Cranmoor, Wis.*
The Cranberry Industry in Wisconsin . *C. M. Secker, Mather*
Rational Home Economics . . *Mrs. N. A. Rasmussen, Oshkosh*
Herbaceous Perennials . . . . . *Wm. Toole, Sr., Baraboo*
How to Beautify the Home Grounds, Illustrated . . . . . *Frank Merle Edwards Landscape Architect, Madison, Wis.*

Tuesday Evening
8.00 o'clock

Students Speaking Contest: An Annual Event
Competition open to all students in the long courses in agriculture. From all who enter Prof. J. G. Moore will select ten who will compete for prizes of $25.00, $15.00 and $10.00.
Papers limited to ten minutes.

Wednesday Forenoon
9.00 o'clock

Business Session from 9.00 to 10.00 o'clock.
President's Address, Reports of Secretary, Trial Orchard Committee, etc.
Election of Officers and Executive Committee.

Program.

Marketing The Michigan Fruit Crop . *F. Kern, A Wisconsin Man*
Strawberry Growing in Bayfield Co. . *T. J. Turner, Bayfield*

Spraying the Small Orchard . . . *H. G. Street, Hebron, Ill.*
Apple Scab Control . . . . . *Prof. R. H. Roberts*
Instructor in Horticulture, College of Agriculture

Wednesday Afternoon
2.00 o'clock

Home Adornment . . . . . *Charles Hey, Dixon Ill.,*
A Village Fair . . . . . *Mrs. Geo. W. Moore, East Milwaukee*
Sweet Peas . . . . . *Robert Blackwood, Lake Geneva*
Paper . . . . . *Nic. Zweifel, Milwaukee.*
Some Things Wisconsin Horticulture Needs . *Prof. J. G. Moore*
What Killed Our Red Raspberries in 1916? These experts will answer *H. C. Christensen* and *Wm. Nelson of Oshkosh, S. B. Fracker* and *Prof. Moore, five minutes each.*
The State Fair: A Round Table Discussion following the regular session.

Wednesday Evening

No definite program has been prepared for Wednesday evening. An informal dinner like the one given last year has been proposed And will no doubt be carried out. The dinner last year, while lacking many of the features of a formal banquet, was a very enjoyable affair.

Thursday Forenoon
9.00 o'clock

The Farm Orchard . . . . *J. F. Harrison, Excelsior, Minn.*
How to Make the Home Orchard Pay . *Victor Felter, Des Moines, Ia.*
The West Allis Gardener's Club . *Mrs. C. E. Strong, West Allis*
Growing Chrysanthemums . . *Robt. J. Sampson, Lake Geneva*
A City Garden . . . . . *Mrs. John Geiger, Oshkosh*
Taking An Orchard Census . . . . . *A. A. Asbahr, Madison*
Dust Control: Round Table Discussion: after adjournment of regular session.

Thursday Afternoon
2.00 o'clock

Wormy Apples . . . . . *Prof. H. F. Wilson*
Entomologist, Agricultural College.
The Year's Work in Insect Control . . . *Prof. S. B. Fracker*
State Department of Entomology
Getting Acquainted . . . . . *Prof. E. D. Ball*
State Entomologist
Breeding Disease Resistant Cabbage . . . *Prof. L. R. Jones*
Plant Pathologist, Agricultural College
Report of Progress on Control of The Cherry Leaf Spot . . .
. . . . . *Prof. G. W. Kiett*

The Capital Hotel is under new management this year and while some of our "regulars" may miss genial "Billy" Nichols, our former host, no doubt the newcomers will aim to please. The rates and service at the Capital have both proven satisfactory in the past.

Those who prefer a hotel on the European plan somewhat cheaper than the Capital will be pleased with the Belmont, corner of Pinckney and Mifflin Sts. "On the Square." This was once known as the Madison Hotel but has been entirely refurnished and an excellent cafe added.

McKAY NURSERY COMPANY
PARDEEVILLE - WISCONSIN

Nursery Stock of Quality for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds.
Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

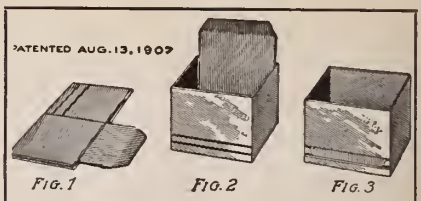
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wisconsin

PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Dec. 12, 13, 14, 1916.

		1st Pre.	2d Pre.	3d Pre.	4th Pre.
1.	Best collection of apples, not less than 15 varieties	$10 00	$6 00	$4 00	$2 00
2.	Best 5 plates (5 varieties) commerical apples for Wisconsin	5 00	3 00	2 00	1 00
3.	Best Plate Ben Davis	1 00	75	50	25
4.	Best Plate Dudley	1 00	75	50	25
5.	Best Plate Fameuse	1 00	75	50	25
6.	Best Plate Gano	1 00	75	50	25
7.	Best Plate Gem	1 00	75	50	25
8.	Best Plate Gideon	1 00	75	50	25
9.	Best Plate Golden Russett	1 00	75	50	25
10.	Best Plate Grimes Golden	1 00	75	50	25
11.	Best Plate Jonathan	1 00	75	50	25
12.	Best Plate King	1 00	75	50	25
13.	Best Plate Maiden Blush	1 00	75	50	25
14.	Best Plate Malinda	1 00	75	50	25
15.	Best Plate McIntosh	1 00	75	50	25
16.	Best Plate McMahan	1 00	75	50	25
17.	Best Plate Newell	1 00	75	50	25
18.	Best Plate Northern Spy	1 00	75	50	25
19.	Best Plate Northwestern Greening	1 00	75	50	25
20.	Best Plate Patten	1 00	75	50	25
21.	Best Plate Pewaukee	1 00	75	50	25
22.	Best Plate Plumb Cider	1 00	75	50	25
23.	Best Plate Salome	1 00	75	50	25
24.	Best Plate Seek-no-Further	1 00	75	50	25
25.	Best Plate Scott Winter	1 00	75	50	25
26.	Best Plate Tolman	1 00	75	50	25
27.	Best Plate Twenty Ounce	1 00	75	50	25
28.	Best Plate Utter	1 00	75	50	25
29.	Best Plate Wagener	1 00	75	50	25
30.	Best Plate Wealthy	1 00	75	50	25
31.	Best Plate Windsor	1 00	75	50	25
32.	Best Plate Wolf River	1 00	75	50	25
33.	Best Plate York Imperial	1 00	75	50	25
34.	Best peck of each of the following varieties: Dudley, Fameuse Gano, Golden Russet, Grimes Golden, Jonathan, King, McIntosh, McMahan, N. W. Greening, Tolman, Wealthy, Windsor and Wolf River	$2 00	$1 00	$0 75	
35.	Best bushel of each of the following varieties to be shown in trays: McIntosh, Northwestern, Wealthy, Tolman, Wolf River	$4 00	$3 00	$2 00	
36.	Best Exhibit Pears	1 00	75	50	



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Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Co.

Dept. D, Cumberland Wis.

If no tradition is violated there will be politics in the air this year for tradition says that a president should retire after two years' service unless extraordinary circumstances exist. Fortunately our political campaigns are always conducted in a friendly spirit and with courtesy to all.

The program carries thirty topics in addition to the student contest and of these fifteen relate directly to the home orchard and garden and home surroundings. The remaining fifteen while intended primarily for the market grower cannot fail to be helpful to the amateur.

The sessions will begin on time and especially will the opening session begin at the hour indicated. The exhibit rooms will be ready Monday afternoon for all who desire to set up displays at that time.

37.	Best Exhibit Crabs	1 00	75	50
38.	Best Seedling Apple	2 00	1 00	50

VEGETABLES.

		1st Pre.	2d Pre.	3d Pre.
	Best collection, not less than 10 entries	$5 00	$3 00	$2 00
1.	Best 6 Blood Turnip Beets	1 00	75	50
2.	Best 3 Round Turnips	1 00	75	50
3.	Best 3 Rutabagas	1 00	75	50
4.	Best 6 Chantenay Carrots	1 00	75	50
5.	Best 6 Shorn Horn Carrots	1 00	75	50
6.	Best 6 Salsify	1 00	75	50
7.	Best 3 Winter Cabbage	1 00	75	50
8.	Best 3 Red Cabbage	1 00	75	50
9.	Best 6 Ears Pop Corn	1 00	75	50
10.	Best 6 Red Onions	1 00	75	50
11.	Best 6 Yellow Danvers Onions	1 00	75	50
12.	Best 6 White Onions	1 00	75	50
13.	Best 6 Gilbraltar Onions	1 00	57	50
14.	Best 6 Winter Radishes	1 00	75	50
15.	Best 6 Parsnips	1 00	75	50
16.	Best 6 Peppers	1 00	75	50

Cranberries.

Thirty-four dollars in premiums will be awarded for exhibits of Cranberries. Premium list by the Cranberry Growers' Association as follows:

	Variety	1st Pre.	2d Pre.	3d Pre.
1.	Bennett Jumbo	$2 00	$1 00	$0 50
2.	Searls Jumbo	2 00	1 00	50
3.	Bell and Bugle	2 00	1 00	50
4.	McFarlin	2 00	1 00	50
5.	Metallic Bell	2 00	1 00	50
6.	Bell and Cherry	2 00	1 00	50

One pint is sufficient for an entry. Send all entries to Frederic Cranefield, Secretary, Madison, Wis., charges prepaid.

Cooked Cranberries.

	1st Pre.	2d Pre.	3d Pre.
Cranberry Pie	$3 00	$2 00	$1 00
Cranberry Sauce, 1 pint	3 00	2 00	1 00

APPLE PIES!

For the best apple pies: three premiums, $5.00, $3.00, $2,00. Competition open to all except professional pastry cooks.

RULES OF ENTRY.

1. All entries must be filed with the secretary before 5 P. M., Tues., December 12th.

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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Quality Stock

Strawberries

Native Plum Apple Small Fruits

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"We have a Fine Lot of Plants for the Garden"

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J. E. MATHEWSON

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Meet The People Who Are Doing Things At

2. Exhibits must be arranged ready for judges by 9 A. M., Wednesday, December 13th.

3. Four apples constitute a plate, no more, no less.

4. Separate samples must be furnished for each entry, except for No. 1, which may include all entries.

5. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary W. S. H. S.*, Madison, Wisconsin.

STUDENTS' JUDGING CONTEST.

Twenty dollars in prizes will be awarded to students in the long and middle courses, Horticultural Department, College of Agriculute, for the best scores in identifying and judging varieties of fruit on exhibit.

Under rules prepared by Prof. J. G. Moore.

Final awards to be decided by a judge appointed by the president.

A feature of the convention will be an exhibit of apple products 57 varieties or as nearly that number as may be, prepared by Mrs. H. H. Morgan of Madison who believes in the apple and volunteered the preparation of this exhibit to prove that Eve exercised good judgment.

Appetizers for the Winter Months

(Continued from page 50)

combination of all of the above. It is dark and generally moist, at least the atmosphere is humid, and the temperature can be kept sufficiently high with a small gasoline stove or even just a kerosene lamp if the cellar is not too large.

Take for forcing roots of rhubarb that are at least 2 years old and allow them to freeze; then pack them tightly in a corner of the cellar in such a manner that the product can be conveniently picked. Cover them over with a little loose, mellow earth just so that the crowns of the plants are at the surface of the soil and water them down well. It is absolutely essential that the roots have been frozen before they are brought in to force as the nature of the plant seems to demand either this or else a long rest period before it will begin to grow rapidly again. From now on the control of light, temperature, and moisture determine the time of maturity. If the product is desired in a short time, keep it quite dark and run the temperature at about 60–65°. This will hasten the crop about a week but the stalks are apt to be small and spindly instead of the thick stocky stalks produced at a temperature of 40° Fahr. The temperature can be easily maintained either with kerosene lamps or with a small gasoline stove. Mr. J. E. Morse says that some of the best and finest rhubarb he had ever seen was forced in a house cellar 36 x 54 feet in which the only heat was that of two large kerosene lamps. If the lamps are used it is a good plan to smoke the globes as otherwise the light is usually sufficient to cause a curving of the stalks and a slight toughening of those nearest to it. In the darkness the leaf develops little or none and the stalk is formed from the food stored in the root, while in the light the leaf grows at the expense of the stalk and the crop takes a long time to mature. Several waterings may be necessary if the atmosphere is not very humid. The ventilation is of very little importance; that caused by entering the room is sufficient to bring the plants along all right. A single root will bear from 18 to 50 stalks ranging over a period of from 4 to 5 weeks or possibly more. If a succession of produce is desired, it is necessary to plant some roots at a later date. In this manner rhubarb may be had from Christmas on until the outdoor crop is ready.

The forcing is very hard on the roots and they cannot be used again until they have been left in the field to recuperate for several years. Hence it is necessary to either plant seed to secure new plants or divide the plants already present. If seed is used, almost a whole year can

The Annual Convention, Madison, Dec. 12--14

be gained by planting it in August and then transplanting it the next spring; the roots are then ready to force a year from that fall.

In forcing asparagus many of the same conditions are essential as for forcing rhubarb except that the temperature cannot vary as much as in the case of rhubarb and still produce good thick shoots. Pick out good three year old asparagus roots or older if they are available and store them, before the ground freezes, where they will not dry out. It is not essential that they be frozen although it is conceded that freezing increases the size and the quality of the crop. In placing the roots in the cellar they are not placed like rhubarb directly on the floor but upon a layer of 4 to 6 inches of a light soil. The roots are then packed in tightly and covered with about 3 inches of good mellow, light soil. If the shoots are desired blanched, this top covering of earth may be increased to 6 or 8 inches. Many consider that asparagus growing is hard, but as a forcing plant it is the easiest and most reliable plant to force that is known. In some cases it may be necessary to lay some tile drains in the bottom layer of soil as the crops requires plenty of water but it should never stand in the soil. Never use cold water; always tepid or warm water.

The temperature of the asparagus seed bed should run a trifle higher than that of the rhubarb bed being about a constant 50-55°. This can be accomplished by placing on top of the bed a layer of decaying leaves that not only impart but also conserve the heat. The heat for the asparagus bed should always be gentle and never strong bottom heat as the latter produces weak spindly growths. The shoots usually start to grow about a week after they are set, and soon the first cutting is ready. The shoots of cutting size last for about two months or beginning in December last to February. Hence, with a second planting in January the season is prolonged until the outdoor season is reached. The biggest question is the keeping up of the asparagus plants for forcing. However, generally enough 3 year old plants can be set aside each year to supply all of the asparagus needed by the family.

Seakale and chicory are forced under much the same conditions as asparagus, blanching the leaves with either straw or leaves. The leaves to make a good tender salad or green should be cut when 6 to 8 inches high and when used at this time make a salad considered far superior to any lettuce salad. For the lover of beet greens this product can easily be produced by placing the beet bulbs gathered the previous fall in a layer of light earth and watering quite freely. Soon the leaves will grow and several cutting of fine greens can be obtained.

If the entire cellar is not available for forcing due to storage of fruits or vegetables, wall off a portion of it as the pleasure of "green stuff" in the bill of fare will amply repay the work of fixing up the place. Besides the pleasure there may be some profit as any extra material will bring a fancy price due to its being out of season.

Now, who will chide, if the dinner is late due to the house wife stopping a while down cellar to gaze at the growing vegetables while the snow blows and the wind whistles outside, for the pie and fresh asparagus on toast will only taste all the better.

Who Wants a

Stereopticon Outfit?

Here is a Bargain

	Cost
Badger Lantern complete with large mount 10 inch objective and five tip acetylene lamp with automobile reflector	$38 75
Carrying case	5 00
Tripod with chains	4 00
3 ft. Hose	50
1 Arc Lamp	6 00
1 No. 110 Volt Rheostat (double) with guard	15 00
	$69 25
1 Chest 15x15x35 in	7 00
Total	$ 75 25

First Offer of

THIRTY DOLLARS

will be accepted, buyer to pay transportation charges. This is an excellent outfit for church, school or community use. Nearly new and in perfect working order. Reason for selling, too clumsy for institute work and expensive to ship long distances.
Property of State Horticultural Society. Address

F. CRANEFIELD, Secretary

701 Gay Building Madison, Wisconsin

Cover the strawberry bed lightly with straw as soon as the ground freezes. When it is frozen solid put on four or five inches of clean straw or light hay.

Examine the bulbs planted and see if they are drying. If the soil is dry water it well.

Fruit and Garden Institutes

Beginning Dec. 19th twenty-two two-day special fruit and garden institutes will be conducted jointly by the Department of Farmer's Institutes and the State Horticultural Society. The speakers will be D. E. Bingham of Sturgeon Bay and N. A. Rasmussen of Oshkosh.

The institutes will be held as follows:

Baraboo, December 19th and 20th.

Reedsburg December 21st and 22nd.

Mt. Horeb, January, 2nd and 3rd.

Dodgeville, January 4th and 5th.

Lake Geneva, January 9th and 10th.

Janesville, January 11th and 12th.

East Milwaukee, January 16th and 17th.

West Allis, January 18th and 19th.

Bayfield, January 23rd and 24th.

Washburn, January 25th and 26th.

Beaver Dam, January 30th and 31st.

Fox Lake, February 1st and 2nd.

La Farge, February 6th and 7th.

Richland Center, February 8th and 9th.

West Bend, February 13th and 14th.

Kewunee, February 15th and 16th.

Waupaca, February 20th and 21st.

Weyauwega, February 22nd and 23rd.

Marinette, February 27th and 28th.

Green Bay, March 1st and 2nd.

Eau Claire, March 6th and 7th.

Sparta, March 8th and 9th.

These institutes have been arranged jointly by the Dept. of Farmer's Institutes and this Society. One or more of our members have been asked by Supt. Luther to act as a local committee to arrange for hall, etc., but every member in or near any of the towns named is hereby appointed a committee of one on publicity for his particular institute.

This splendid recognition of horticulture, twenty-two special institutes, by the Institute Department, places us under an obligation and every member of the Society within reach of these institutes should attend and urge his neighbors to attend. The men who will conduct them are splendidly fitted for the work. Mr. Bingham who was selected by this Society eight years ago as special worker in horticulture was a pioneer in this field for until that time an occasional talk on the farm garden by some member of the institute force whose main specialties were live stock, poultry and dairying, constituted all of horticultural science and practice taught at the seventy or more farmer's institutes. During his eight years of service Mr. Bingham has attended hundreds of institutes generally making four a week through out the season. He is said to be the only fruit grower in the state who has never been engaged in any other line of work.

Mr. Rasmussen who will handle the gardening topics both from the home and market standpoint is well known to all of our members and to thousands of others who have heard his thoroughly practical talks at institutes and horticultural gatherings.

The two-day institute with only two speakers is somewhat of an innovation but holds promise of success. The institutes are primarily for the farmer with special attention given to commercial fruit growing and market gardening in sections where the conditions of soil and markets are favorable for these lines of work. These are some of the subjects which will be discussed:

Trees for the Farm Orchard

The Farmer and the Nursery Agent

Planting Trees

When and How to Prune

Fertility and the Farm Orchard.

Pests of the Farm Orchard and How to Control Them.

Soil Handling in the Orchard.

Picking and Storing Farm Fruits.

How to Exhibit Fruit at Fairs

The Wisconsin State Horticultural Society

How to Succeed with Small Fruits on the Farm

Commercial Fruit Growing.

Marketing Fruit

Farm Gardens

How to Store Vegetables for Winter.

Vegetable Gardens for City and Town.

Small Fruits for Village & City Gardens

Garden Tillage

Hot Beds and Cold Frames

Diseases and Insects of the Garden and Their Treatment.

Growing Vegetables for Market.

Marketing Vegetables.

Improvement of the Home Grounds.

How to Exhibit Vegetables at Fairs.

In addition practical demonstrations in pruning will be conducted whenever the weather permits.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

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The Kickapoo Development Co.
Gays Mills, Wis.

Watch the potato bin carefully for decaying tubers. Some fields contained a good many decaying tubers this autumn.

Have you made any provision for the birds this winter? They should have grain and seeds after snow flies.

Do not let the squash freeze.

It is safer to cover raspberries and blackberries than to leave them unprotected. Good crops are often raised without covering, but there is danger of the tops dying to the ground or killing out entirely.

Have you made and put up that bird-feeding shelter for the winter? Do it now.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII | Madison, Wisconsin, January, 1917 | Number 5

An altogether pretty picture. The flowers are Sweet William, the pretty miss we can say is Sweet Marjorie and the other Sweet Eleanor.

SWEET PEAS

And How To Grow Them for Exhibition

Robert J. Sampson,
Lake Geneva

The cultivation of sweet peas for exhibition purposes has now become so popular that it is necessary to give the matter really serious consideration, if anything like success is to be achieved.

Though the sweet pea will flower profusely under almost any conditions, yet, if good flowers are required, that are fit to compete against one's neighbors, a more liberal mode of treatment must be adopted.

The preparation of the soil is probably the chief essential towards success, and if this can be dug or trenched to a depth of from 2 to 3 feet in the Fall, and a liberal dressing of manure and bone meal given during the operation, and left fallow for the winter months, much less labor will be required during the summer with the watering pot, etc.

The nature of the manure does not matter very much, but if growers have their choice, I would advise the use of cow manure on light soils, whilst for soils of a heavier nature, good long, strawy horse or stable manure will be found equally satisfactory.

Soot, old lime or mortar, rubble, leaf soil, road scrapings, etc. may also be incorporated with the soil. The former (soot) will help to check grub pests, whilst the other materials will help to make the soil, in many instances, more porous and easily worked at planting time; the less sticky the soil the more likely are the plants to grow away freely in it.

Sowing In Pots

For early exhibition purposes, it is best to sow in pots or boxes in the autumn and winter, in the cold frame or greenhouse from the middle to the end of October being the best time; when this is not convenient, they may be sown very early in February, this time also in pots or boxes, giving just a slight amount of heat to germinate the seeds, after which they must be treated as hardy as possible. This applies equally well to the autumn as to the spring sown plants.

Air must be given on all fine days, in fact the lights may be entirely removed except when it is raining, or the weather is real cold. Precautions must be taken against the ravages of birds, mice, etc.

Sowing Outside

Sowing may also be made in the open ground from the beginning of March to the middle of April, according to the district and conditions of the soil, which should have been prepared as advised. A dry day should be chosen for sowing and the surface soil broken up very fine, where the drills are to be made; these should be from 1½ to 2 inches deep, and the seed placed about 3 inches apart in them, and these may be thinned to about one foot apart, after the plants become strong.

Planting Out

Plants raised in pots may be planted out any time after the beginning of April, providing the weather is favorable, and the soil in good workable condition.

Previous to planting out, the plants should have been made as hardy as possible, by standing quite out in the open for a few days, with just a little shelter from the winds. In planting, the roots should be shaken fairly free from the soil, and a good hole made to receive them, spreading the roots carefully, filling with fine soil, and making quite firm especially round the collar of the plant. It is a good plan to plant in double rows, allowing a foot apart each way between plants. A few small twigs should be put around the plants to keep them upright, and a little soot sprinkled among them to keep off slugs. The hoe should be kept going among the plants whenever the soil is dry enough, and apart from keeping an eye on them to see they are not injured by birds, slugs, or wireworms, etc., this is all that should be necessary till they are tall enough for permanent staking.

Staking

This should be done as soon as possible after planting out and before they by any chance get broken down by the wind. Staking should be carefully done, and good straight maple brush is probably the best, and if that can be procured from 6 to 8 feet high, so much the better as in a favorable season under good cultivation, they will attain this height. A little extra neatness and security is obtained if a wire or two is run from end to end of the rows, from posts, to which the tops of the brush may be tied here and there and in really windy and exposed districts this is quite necessary when growing for exhibition.

Tying, Etc.

To secure really high-class flowers, a little thinning of the shoots is almost a necessity, but it should not be carried too far—3 or 4 shoots to each

plant is quite enough, and if these are allowed plenty of light and air, they will give flowers quite large enough for any purpose. This thinning should be done as soon as the shoots have become really strong, and those that are to be retained, should be given a tie wherever necessary—afterwards removing all side growths as they appear.

Mulching, Watering, Feeding

If the ground has been well manured, very little water or feeding should be necessary till after the plants have commenced blooming, though during a very hot season, a little light mulch may be necessary earlier than this to somewhat conserve the moisture, or on very light soils, it may be necessary to water.

After the plants get well into bloom, both watering and feeding must be regularly attended to, especially if a good, long season of bloom is desired. Weekly or twice weekly waterings of liquid manure may be given with advantage, and an occasional dressing of artificial manure will help to keep up the vigor of the plants, as also will a fairly thick mulch of light manure—stable manure is probably the best for this purpose, it being much cleaner for getting about on than cow or pig manure.

The removal of the bloom is an important matter, as under no circumstances must they be allowed to seed and when the plants are intended for exhibition the blooms not so required should be removed before they attain maturity, thus lessening the strain on the plants. Under exceptional weather conditions, it might be advisable to remove some of the buds also, to give the plants an entire rest, though if this is done, ample time must be allowed for the flower to develop before a show.

Shading

A little shading is sometimes necessary to be able to exhibit some varieties in the best possible condition, but fortunately there are not many that require it, but such varieties as Earl Spencer, Edrom Beauty, and one or two other of that color, must at least be shaded in the south for them to retain their color; also there are a few varieties that require a cooler position than others, but this must be decided by actual experiment, as what will do well in one district and stand the sun, might burn and lose the color, in another.

The varieties to grow are quite a matter of personal taste as to color, or whether they are for exhibition purposes or for garden decoration only.

If this treatment is followed out you can have stems 15 inches long as I have often had them that length. Bone meal and blood is the artificial fertilizer that I have always used to advantage.

Dark Colors — Warrior, Nubian, Othello Spencer.

White—Constance Hinton, King White

Blue or Lavender—Wedgewood, Afterglow, Blue Gem.

Crimson—Maude Holmes, King Edward Spencer.

Pink—Countess Spencer, Elfrida Pearson, Peace

Cream and Yellow—Clara Curtis, Dobbies Cream.

Orange Scarlet—Thomas Stevenson, Edrom Beauty, Robert Sydenham.

Warning to Mushroom Growers

As the result of a serious case of mushroom poisoning in a mushroom grower's family recently, the mushroom specialists of the U. S. Department of Agriculture have issued a warning to commercial and other growers of mushrooms to regard with suspicion any abnormal mushrooms which appear in their beds. It seems that occasionally sporadic forms appear in mushroom beds, persist for a day or two, and then disappear. These are generally manure-inhabiting species and may be observed shortly after the beds have been cased. In the instance cited, however, these fungi appeared in considerable numbers at the time the edible *Agaricus campestris* should have been ready for the market, and the dealer supposed it was probably a new brown variety and tried it in his own family. As a result, five persons were rendered absolutely helpless and were saved after several hours only through the assistance of a second physician who had had experience with this type of poisoning.

In the opinion of the Department, this case is peculiarly significant and demonstrates that the grower must be able to distinguish *Agaricus campestris* from any of the wild forms of mushrooms that may appear in the beds. Under the circumstances, the Department strongly urges every grower to make himself thoroughly familiar with the cultivated species. Complete descriptions, with pictures of poisonous and cultivated species, are contained in Department Bulletin 175, "Mushrooms and Other Common Fungi," which can be purchased for 30 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. (The Department of Agriculture has no copies of this bulletin for free distribution).

CRANBERRY NOTES

By J. W. FITCH

The thirtieth annual meeting of the W. S. C. G. Assn. will be held in Grand Rapids, Tuesday, Jan. 16th in the G. A. R. Hall at 9:30 a. m. While it was voted at the August meeting to have the meeting the first Tuesday after the first of January it developed that this year, the meeting coming the day after New Years made it impossible or very inconvenient for many to attend so, at the request of President Searls and after consultation with the members of the executive committee that could be reached the date was changed to the one set at the meeting in January.

The meeting promises to be very interesting. Data in regard to the pumping experiments which were successful will be presented. It is hoped to have Dr. Ball, state entomologist and Mr. A. W. Chaney present. Mr. Chaney can give a very interesting talk on the Advertising Campaign as well as his usual summary of the seasons marketing operations.

Mrs. S. N. Whittlesey, who is an expert on the cooking of cranberries, will demonstrate that they are a most economical fruit. She can also tell of her experience as a delegate to the Horticultural meeting. Mr. Geo. Arpin who took charge of the exhibit at the State Fair will give us some ideas as to improvements in that direction. Mr. Malde's summary of the work at the Station is always interesting and brings out much valuable discussion. President Searls, who is taking a most active part in the development of several new bogs along the most approved and progressive lines, will tell of the progress being made. Mr. C. M. Secker, who has been assisting the selling agency at Chicago, will give an account of how this end of the business appeals to a grower. The progress of the work of the committee appointed to confer with the University authorities in regard to the change of the Experiment Station will call for a general discussion of the question. The past season was generally a very satisfactory one to the growers. While blight and frost reduced the crop somewhat and the frost made cleaning the berries more difficult, the most complaints from dealers was on account of lack of size. To increase the size of the Badger brand on Bell & Cherry should should be the endeavor of every grower, and this can only be accomplished by renewing the vines either by sanding, with which must go better drainage, or by mowing, fertilizing and pruning. A newly planted bog always bears fruit of better size. Hence the endeavor must be to keep the vines young. There is much room for work in this direction. All growers should make a New Year's resolution that they will send some berries to the State Fair and the Horticultural meeting in 1917, and this will be brought to their attention in sufficient time for them to save berries for this purpose. There is plenty of room for a better knowledge of the cranberry right in Wisconsin, both as to its cultivation and value as a fruit, and by taking advantage of every opportunity offered, especially the State and County Fairs, the consumption could be greatly increased right at home. A little help from each grower will make a big showing and let the public know that cranberries are a notable product of Wisconsin's fertile soil.

Cranberries

Mrs. S. N. Whittlesey.

Ever since the creation of Man, thoughtful Eves have given consideration to the palates of their adored Adams.

We do not know whether Mother Eve stewed, fried, or baked the much talked-of apple, but we feel confident it must have presented a very attractive and appetizing appearance to have caused Father Adam's great fall.

Time and experience have made many changes in the culinary art, and though we read of the Romans using much the same recipes as ours of today improvements must have been made and wisdom gained.

Among the fruits that are demanding and receiving attention at the present time, is the one of which I have been scheduled to speak—the Cranberry. The much-abused, often maligned cranberry—the berry whose merits and possibilities are only beginning to be known.

From childhood to young womanhood I regarded the cranberry as much a part of and necessity for the Turkey as the dressing. That they could be used in any other way or time was not thought of, so some 10 years ago when I heard of a young man embarking in the raising of cranberries for a livelihood it struck me as laughable and lamentable. Who could ever make a living in that business? Would there be de-

mand enough to support any one?

Three years later this same young man convinced me there was bread and butter enough in it for two—and since that time out fate and family have been largely dependent on the growth and sale of the cranberry. Instead of the annual two or three quarts of berries as turkey accessories, a barrel of them went into the cellar. How to use that many berries was a problem which from that and subsequent years has developed many ways and better ways to prepare them.

Their keeping qualities were then unknown to me and may be to most of you. It is not necessary to can cranberries as you do all other berries to save them. If you put them in a cool, dry place as you do apples, they will keep just as long and just as well as apples.

The cranberry is one of the acid fruits. Do not decry or destroy that acid. God put it there for our benefit just as He did in the currant—the strawberry—the lemon. Don't try to defeat His purpose by neutralizing that acid with soda. Who would think of par-boiling the strawberry in soda water or offering lemonade first sweetened with soda? Be as just to the cranberry and save its valuable qualities, clean flavor and beautiful color. Mr. Schlosser says:

"The chemical analysis of cranberries shows that they contain mild acid combinations which are by nature converted into alkaline carbonates in the blood which help to purify it and have a tendency to ward off bilious and rheumatic tendencies. They also aid digestion, clear the complexion and are perfectly harmless to the most delicate stomach."

Because of their acid properties cranberries should always be cooked in granite or porcelain-lined dishes, also, after cooking, should be turned into glass, china or earthenware. Like the apple, they can be cooked as needed—but unlike the apple—the sauce will keep for weeks in an open or uncovered dish without deterioration if kept in a cool, dry place, in fact, we have never lost by fermentation where other fruits would have spoiled.

The reputation of cranberries has suffered to a disastrous extent in the past through the injurious treatment they have received in the methods of cooking, and I fear it will take years to overcome the prevailing opinion that they require so much more sugar than other fruits. Cranberries are *not* sugar consumers compared with most other fruits.

I am pleased to be able to show you what an amount of sauce can be made from one quart of cranberries and one pound of sugar, provided the water supply is not restricted.

Cranberries can be used with toothsome results in a great many ways other than sauce or jelly. While we do not wish to detract from the good use of the apple, we would like our lady friends to try for a change—substituting cranberries for apple in a suet dumpling, or steamed pudding—just stir them into the dough as you would raisins in a cake. They are also an addition to mince meat—cooking them first as for sauce—and when apples are scarce can be used generously to take the place of the apple.

A fine short-cake can be had with a good biscuit crust and cranberry sauce for spread or filler. A delicious conserve is now made with cranberries for base and addition of some raisins and orange juice—sweetened to taste and cooked just long enough to solidify. A refreshing drink can be made from the strained juice—prepared similar to grape juice.

Two cups of chopped berries, 1 cup of sugar, 1 tablespoon of flour mixed together and baked between two crusts make an excellent pie. I put the berries through the meat chopper.

Perhaps nowhere is the berry more abused than in the making of sauce. I do not approve of long, slow stewing or simmering, or cooking water and sugar together before adding berries, but I do earnestly urge the use of *boiling* water, the putting together at once the berries, sugar and water, and cooking rapidly over a brisk fire. My formula is frequently given but as the method of procedure never has, I am going to state it here in detail, hoping some of you ladies will at least give it a trial.

First be sure of a hot stove and boiling water. Place 1 quart of washed berries in granite kettle or sauce pan. Pour over these some boiling water—a quart perhaps—and turn immediately into colander. This warms the kettle and takes chill from berries, facilitating speedy cooking. Return berries at once to kettle, add 1 pint of sugar, then 1 pint boiling water, stirring just enough to coat all berries with this sweetened water. Cover when berries begin to swell and "pop" stand right by and mash with spoon against side of kettle till every berry is broken, keeping sauce cooking rapidly during this time. Remove from fire and turn into glass, china or earthenware dish. If conditions are right ten minutes will do the work and you will

have tender skins, fine flavor, and rich color with all the virture of the berry retained.

I wait for the day when by proper treatment and judicious methods, the cranberry will come into its own rightful place in usefulness and appreciation by the inhabitants of America.

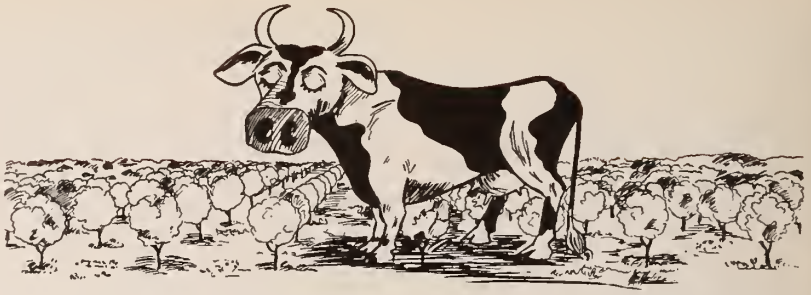
The Care of My Orchard

J. F. Harrison, Delegate from Minnesota Society

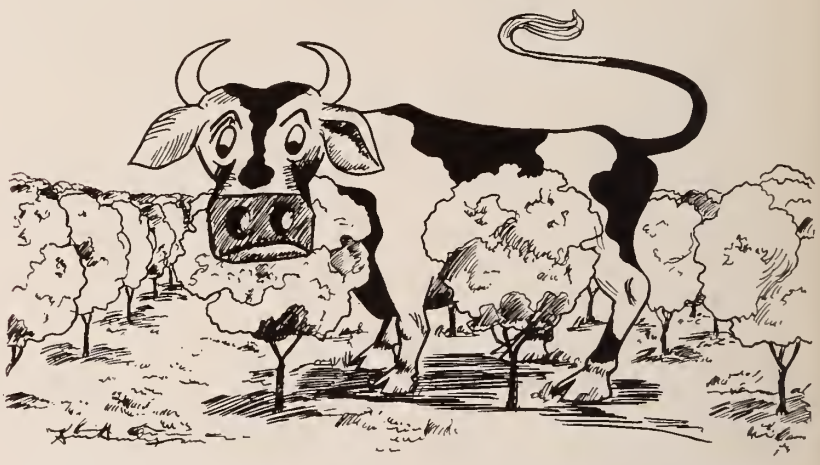
About twenty years ago I set out my first orchard and of course like many others made some mistakes. One serious mistake was that I got too many varieties, another I tried to cultivate them and grow corn, potatoes, strawberries and other garden crops between the rows. This was a bad thing in my case as my orchard was set out on a north east slope, which was quite steep. The cultivating of the crop caused the good soil to wash down to the foot of the hill and left the tree on a ridge. I did not set the whole slope out to trees when I set out the first orchard but set out enough to give me some experience for I then realized cultivation on a side hill was not the thing.

A few years later I set out the rest of the piece but this I set out in clover and timothy sod but I kept them mulched with good barn yard manure and I found they did just as well if not better than the ones I cultivated and now I am convinced that this is a better way to start an orchard in this extreme hot and cold climate.

I have always sprayed at least once a year since the orchard has been bearing and last season I sprayed four times. I generally white washed the trees early in the spring as far up as a man can reach. This I consider takes the place of a dormant spray, in fact this is a dormant wash. I think this has helped to keep the insects down in the orchard.



This is supposed to be a composite likeness of all the cows in Wisconsin 10 years ago. Dozing contentedly, confident of her supremacy she gives no heed to the little apple trees growing all around her nor senses in them a formidable rival.



This is another picture of the same cow—but now somewhat agitated as she finds these apple trees so big as to cast her majesty somewhat into the shade. Time 5 years ago.

See next page

I have raised calves in my orchard every year after the trees have grown so large that we cannot cut the hay and cure it. I think we have had calves in the orchard for the last twelve years. We have raised a crop of calves as well as a crop of apples every year since the trees started to bear,—some years more apples than others but generally the same number of calves. We realize on an average over a hundred dollars an acre every year since the orchard has started to bear well besides the crop of calves which I have spoke of. I believe the calves help to keep down insects in the orchard because they eat all the apples that fall off early which are generally wormy. I mulch every other year with manure right from the barn. I keep the orchard pruned, generally do a little every year. I believe in lots of air and sunlight. An orchard to do well needs air drainage as well as soil drainage.

You must have plenty of air and sunlight if you want nice and well ripened fruit. This fruit always brings the best price. By keeping young growth in an old orchard you will have just as nice fruit and just as well colored up fruit in an old orchard as you do in the young orchard, this is done by pruning when done right. Do not let the tree have its crop on old wood all the time, cut some of it out each year. For a young orchard I would not prune very much.

Here we see the once mighty Queen in a state of great alarm tinged with sorrow at her almost total eclipse by the rapidly growing apple orchards of Wisconsin and standing on her hind legs in order to be seen at all. Time 1927.

The first two years after the orchard is set out I never use a knife; I just break off such new growth as ought not to be there with my hands and then after the tree has been out two years to make it spread out and give it a good top and so that it will not grow too tall, I cut off all the third year growth that is inclined to shoot straight up. This will cause the tree to spread out and in a few years it will have a well shaped top and not too tall. We do not like to pick apples from a twenty foot ladder. This is about all I have had time to write about my experience in orcharding but I am ready for questions if any one has any to ask.

Still King

So far as history reveals, the apple was one of the earliest fruits cultivated by mankind.

According to Brand's Popular Antiquities, the apple was king of fruits in the early days of Merry England and was one of the chief means by which our English forebears dispensed hospitality. Some curious customs were in vogue in those early days, as may be seen from the following account:

"On Christmas eve the farmers and their men in Devonshire take a large bowl of cider, with a toast in it, and carrying it in state to the orchard, they salute the apple trees with much ceremony, in order to make them bear well the next season."

The ceremony consists in "throwing some of the cider about the roots of the tree, placing bits of the toast on the branches," and, finally, "encircling one of the best bearing trees in the orchard, they drink the following toast three several times:

'Here's to thee, old apple tree,
Whence thou mayest bud, and whence thou mayest blow,
And whence thou mayest bear apples enow!
Hats full! Caps full!
Bushel, bushel, sacks-full!
And my pockets full, too! Hurra!' "

On New Year's eve, it was the custom for the boys to organize "apple-howling" parties and go from orchard to orchard, merry-making, in order to show their gratitude for past bounties and to court a continuance of the favors of the goddess bountiful. One of the songs runs:

"Stand fast, root! bear well, top!
Pray God send us a good howling crop:
Every twig, apples big;
Every bow, apples enow!"

"Then they shout in chorus, one of the boys accompanying them on a cow's horn. During this ceremony, they rap the trees with their sticks." This is known as "wassailing" the trees. The ceremony was concluded by a kind of dance in which the boys hopped about the tree singing:

"Wassaile the trees that they may beare
You many a plum and many a peare;
For more or less fruits they will bring
As you so give them wassailing."

They say the Lion and the Lizard keep
The Courts where Jamshyd gloried and drank deep:
And Braham, that great Hunter—the Wild Ass
Stamps o'er his Head, but cannot break his Sleep.

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L. G. Kellogg

The Annual Convention

The report of a convention is dry stuff, dry to write and dry to read. You say, "very fine," "best we ever had" etc., etc., on to the end and you have said just what you said last time. That's all there is to be said about it. The only way to get anything out of a convention is *to be there.*

It *was* a good convention. The program was full and it was *intense* every hour and every minute.

Some of the high lights: The five papers by women, Mrs. Whittlesey's paper on cranberries which was only incidentally about cranberries after all but contained much besides, the philosophy of content of a peaceful, happy home life; Mrs. Rasmussen's clear thinking and descriptions of sane and rational housekeeping helps; Mrs. Geiger's delightful story of the garden; Mrs. Strong's tale of a garden that yielded not only flowers and vegetables but best of all regained health; Mrs. Moore's story of a village fair; all these taught us that our convention is a stale and unprofitable affair without woman's help.

Prof. Robert's talk on apple scab control which provoked discussion that persisted until the president shoved the whole bunch of disputants out of the meeting into the corridor where they talked until the following day.

Prof. J. G. Moore's forceful address on the needs of Wisconsin horticulture was one of the most striking and helpful talks that our members have listened to since Prof. Bailey's visit fourteen years ago. This will be reviewed in a later issue.

These are some of the bright spots but all of the rest was good.

The fruit exhibit was exceptionally high in quality; no better fruit has been shown in recent years and no other fruit exhibit in the wide world was ever staged in a more beautiful place, the grand rotunda of the Capitol. Under the great dome which is rivaled by but two others in the world, with massive columns of Italian marble for a background surely Wisconsin apples were for once well staged.

The "57 varieties" of apple products in glass prepared by Mrs. H. H. Morgan attracted universal attention. A complete list of these and recipes for all important ones will be given through these columns.

So ends the story.

Your Good Will, Please!

If you are a paid member of this Society you are certainly satisfied with the investment.

The bigger the membership the more you will get for your money. The membership fees are applied exclusively to the support of the magazine and pay for it *in part*, the balance being derived from advertisers. Advertising rates are based almost wholly on circulation. If the circulation of this paper could be doubled the advertising rates could be advanced fifty per cent and still give the advertiser better value for his money.

With the increased revenue Wisconsin Horticulture could be increased to twenty-four pages or more. It's clearly up to you, my dear reader. You are the one and the only one who can turn the trick. The paper is sent *only* to members. Will you do your share?

We are Not Highbrows

A lady who attended the Convention for the first time this year expressed her great surprise and pleasure at meeting so many people eager to learn about gardens and the simple things about gardening. "I had heard about the Horticultural Society but had always thought of it as composed of people of much learning and that everything would be way above my head but instead I found just 'common folks' like myself with an over powering love of gardening and all eager to learn and to tell others their own experience."

A mighty fine compliment to everybody concerned in making the convention. We are just "common folks" united for our common good and the welfare and uplift of all the people of the state. If each of the host of members who have attended conventions and in other ways derived benefits from their membership would induce just one other person to join the society what a boost we would get in membership! It's just a little bit selfish if you don't do it. Don't you think so?

Head Off Rabbits and Mice

Among the absurdities of the game laws may be mentioned the protection of rabbits which annually destroy thousands of fruit trees worth many times more than all the rabbits killed for food.

Although not in the game laws the statutes in other places condemn the hawks, which destroy mice and moles.

Be that as it may the young apple trees should be protected. If not attended to in the proper season it may still be done if snow is not too deep. Wrap the trunks with tar paper.

In this connection Mr. J. A. Hays of Gays Mills who has annually protected several thousand trees offers the following valuable testimony.

Use only tar paper; the tar odor alone repels mice. A grain bin lined with tar paper is mouse proof. Use slack tar paper No. 3 which is neither so heavy as to break nor so light as to tear in the wind if loosened.

After thoroughly testing the "spiral" method of wrapping, the paper cut in strips 4 to 6 inches wide and wound spirally around the trunk, Mr. Hays has abandoned it in favor of a section of the roll 18 inches long and wide enough to fit around the trunk with a liberal lap. These wrappers may be conveniently made by sawing the roll transversely.

Most important of all Mr. Hays testifies to serious injury in the spring of 1911 resulting from leaving the wrappers on too late in the spring.

Where wrappers were not removed until after two or more weeks of warm April weather some trees were killed outright and others badly injured mostly on the south side.

Six of the Fifty-Seven

The following recipes for six of the apple products shown at the convention were submitted by Mrs. Morgan on request by the editor.

APPLE CONSERVE OR CANDIED APPLE

Make syrup of 2 cups sugar to ½ cup water, use N. W. Greening, or Jonathan apples, pare, core and cut in slices, simmer apples in syrup until clear, turning often. Take out carefully and dry in sun for 12 hours. Roll in gran. sugar each day until they will not absorb more sugar, pack in glass jars. May be used in fruit cake or as a confection.

APPLE DELIGHT

2 cups chopped apple cooked in double boiler with 2 cups sugar, juice and chopped rind of 1 orange and 1 lemon, 1 cup chopped raisins, cook 1 hour adding 1 cup chopped walnuts 5 min. before done. Seal in jelly glasses.

APPLE SYRUP

1 doz. Northern Spy apples, cut in pieces and cook in water to cover, strain and to each qt. juice add juice of 4 oranges and

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2 lemons. Boil 10 min., add ⅔ as much sugar as juice, boil 5 min. longer, skim and seal.

APPLES WITH PINEAPPLE

Make a syrup of 1¼ lbs. sugar and 1 qt. boiling water, add to this 1 good sized pineapple, grated, and bring to boiling point. Pare, core and quarter 4 lbs. apples and cover with boiling water, simmer 5 min. Lift carefully, drain and slide into syrup. Simmer until apples are tender, then seal. These are delicious.

HONEY APPLES

Pare and core 1 doz. apples, place in granite kettle with syrup made of 1½ pts. water and 2 large cups sugar. Simmer until tender turning often. When done apples should be clear and juice like honey. An attractive pink color may be given to this by cooking skins in water before making syrup. Northern Spy or Jonathan apples best for this.

MAPLE APPLE SAUCE

Stew 2 qts. pared and quartered apples in enough water to keep from burning, adding 1 cup of maple syrup when partly cooked. When apples become soft sprinkle with granulated sugar and remove from fire.

The Prize Winners

Best collection of apples—First, A. K. Bassett, Baraboo; second, G. H. Townsend, Madison.

Best five plates, commercial—First, Great Northern Nursery, Baraboo; second, H. H. Harris, Warrens; third, G. H. Townsend; fourth, J. E. Baer.

Plate Ben Davis—First, Theodore Kurtz, Jr., Cedarburg; second, A. K. Bassett; third, N. A. Rasmussen, Oshkosh.

Plate Fameuse—First, H. H. Harris; second, A. K. Bassett; third, L. B. Irish; fourth, N. A. Rasmussen.

Plato Gano—First, J. E. Baer; second, N. A. Rasmussen; third, A. K. Bassett.

Plate Gem—First, L. B. Irish; second, A. K. Bassett.

Plate Golden Russett—First, Theodore Kurtz; second, Henry Simon, Baraboo; third, A. K. Bassett; fourth, N. A. Rasmussen.

Plate Grimes Golden—First, D. F. Bingham, Sturgeon Bay; second, J. V. Beyer, North Milwaukee.

Plate Jonathan—First, G. H. Townsend; second, A. K. Bassett.

Plate King—First, G. H. Townsend.

Plate Maiden Blush—First, N. A. Rasmussen.

Plate McIntosh—First, Great Northern Nursery; second, N. A. Rasmussen; third, D. F. Bingham; fourth, William Nelson, Oshkosh.

Plate McMahon—First, H. H. Harris; second, G. A. Freeman, Sparta; third, L. B. Irish; fourth, G. H. Townsend.

Plate Newell—First, J. E. Baer; second, L. B. Irish; third, D. E. Bingham; fourth, H. G. Townsend.

Plate N. W. Greening—First, Great Northern Nursery; second, G .A. Freeman; third, A. K. Bassett; fourth, Henry Simon.

Plate Northern Spy—First, G. H. Townsend; second, Theodore Kurtz.

Plate Patten—First, L. B. Irish.

Plate Pewaukee—First, A. K. Bassett; second, G. H. Townsend; third, Theodore Kurtz; fourth, N. A. Rasmussen.

Plate Plumb Cider—First, N. A. Rasmussen.

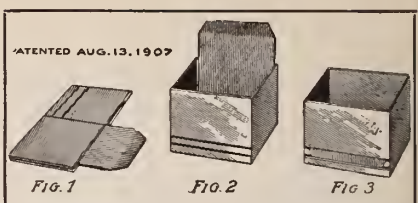

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Plate Salome—First, Great Northern Nursery; second, Henry Simon; third, A. K. Bassett.

Plate Seeknofurther—First, D. E. Bingham; second, A. K. Bassett.

Plate Scott Winter—First, J. E. Baer; second, G. H. Townsend; third, A. K. Bassett; fourth, H. H. Harris.

Plate Tolman Sweet—First, J. E. Baer; second, Theodore Kurtz; third, Henry Simon; fourth, G. A. Freeman.

Plate Utter—First, A. K. Bassett.

Plate Wagner—First, Richard Gilbert, Sturgeon Bay.

Plate Wealthy—First, H. H. Harris; second, A. K. Bassett; third, A. C. Boutin, Bayfield; fourth, L. B. Irish.

Plate Windsor—D. E. Bingham, second, Great Northern Nursery; third, A. K. Bassett.

Plate Wolf River—First, H. H. Harris; second, G. A. Freeman; third, N. A. Rasmussen; foruth, J. E. Baer.

Plate York Imperial—First, N. A. Rasmussen.

Peck Fameuse—First, H. H. Harris; second, A. K. Bassett; third, J. E. Baer.

Peck Gano—First, J. E. Baer.

Peck Golden Russett—First, Henry Simon; second, Theodore Kurtz; third, N. A. Rasmussen.

Peck Jonathan—First, G. H. Townsend.

Peck King—First, G. H. Townsend.

Peck McIntosh—First, Great Northern Nursery; second, N. A. Rasmussen.

Peck McMahon—First, G. A. Freeman.

Peck N. W. Greening—First, Great Northern Nursery; second, J. E. Baer; third, G. H. Townsend.

Peck Tolman—First, Theodore Kurtz; second, J. E. Baer; third, Henry Simon.

Peck Wealthy—First, N. A. Rasmussen; second, Great Northern Nursery; third, G. H. Townsend.

Peck Windsor—First, Great Northern Nursery.

Peck Wolf River—First, J. E. Baer; second, G. A. Freeman; third, N. A. Rasmussen.

Bushel McIntosh—First, Great Northern Nursery.

Bushel N. W. Greening—First, Great Northern Nursery; second, J. E. Baer.

Exhibit Crabs

First, A. C. Boutin; second, N. A. Rasmussen; third, L. B. Irish.

Seedling Apple—L. B. Irish.

Cranberries

Bennett Jumbo—First, Mrs. S. N. Whittlesey, Cranmoor.

Bell & Bugle—First, J. W. Fitch, Cranmoor.

Metallic Bell—First, Mrs. S. N. Whittlesey, Cranmoor.

Bell & Cherry—First, J. W. Fitch.

Cranberry Sauce, 1 pt.—First, Mrs. O. G. Malde, Grand Rapids; second, Mrs. S. N. Whittlesey.

Pies

Apple Pie—First, Mrs. Geo. Johnson, Madison; second, Mrs. E. S. Cooper, Madison; third, Mrs. T. E. Holley, Madison.

Cranberry Pie—First, Mrs. Geo. Johnson; second, Mrs. Joseph Skelton, Madison; third, Mrs. Ed. Larsen, Madison.

Students Speaking Contest—First, C. B. Blosser; second, H. W. Albertz; third, M. W. Sergeant.

Students Judging Contest—First, A. R. Hargrave; second, J. I. Etheridge; third, J. W. Campbell.

Vegetables

Best collection, not less than 10 entries—First, N. A. Rasmussen, Oshkosh; second, John F. Hauser, Bayfield; third, E. L. Roloff, Madison.

Six Blood Turnip Beets—First, John F. Hauser; second, N. A. Rasmussen; third, John Hagberg, Bayfield.

Three Round Turnips—First, John F. Hauser; second, N. A. Rasmussen.

Three Rutabagas—First, John F. Hauser; second, John Hagberg; third, N. A. Rasmussen.

Six Chantenay Carrots—First, John F. Hauser; second, N. A. Rasmussen; third, John Hagberg.

Six Short Horn Carrots—First, John Hagberg; second, John F. Hauser.

Six Salsify—First, N. A. Rasmussen; second, E. L. Roloff; third, Christensen & Davis, Oshkosh.

Three Winter Cabbage—First, N. A. Rasmussen; second, John F. Hauser.

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Three Red Cabbage—First, N. A. Rasmussen.

Six Ears Pop Corn—First, N. A. Rasmussen; second, E. L. Roloff.

Six Red Onions—First, N. A. Rasmussen; second, John F. Hauser.

Six Yellow Danvers Onions—First, N. A. Rasmussen.

Six White Onions—First, N. A. Rasmussen; second, Christensen & Davis: third, John F. Hauser.

Six Gibraltar Onions—First, Walter Franey, Madison; second, N. A. Rasmussen.

Six Winter Radishes—First, John F. Hauser; second, Christensen & Davis; third, N. A. Rasmussen.

Six Parsnips—First, E. L. Roloff; second, N. A. Rasmussen; third, John Hagberg.

Six Peppers—First, N. A. Rasmussen; second, E. L. Roloff.

THE FRUIT BUD.

By R. H. Roberts, at Summer Meeting, Lake Geneva, Aug. 22, 1916.

It is important to know the fruiting habit of a tree when deciding upon the pruning that it should receive. The number, location and position of the fruit buds have an important bearing upon the amount of cutting as well as the place to make the cuts.

Fruit buds belong to three general classes, (1) those which are produced as side or lateral buds along the new terminal limb growths of the tree, (2) as lateral buds on the shorter side limbs or spurs and (3) as terminal buds on limbs and spurs.

They are normally formed in July when there is an abundance of elaborated food present. With apples, should there be an overload of fruit which has used up the surplus food in developing blossoms and small fruit, unless accompanied by early season conditions which tend to develop starches, no blossom bud formation takes place, with the result that an "off" year follows the heavy crop.

In external appearance the fruit bud is thicker or plumper and in plums it is lighter colored than the vegetative or wood bud. When sectioned vertically in late fall or spring, the fruit bud may be readily distinguished by the rounded or nobby appearance of the core or growing point. The vegetative bud has narrow sharp points, or the undeveloped leaves.

American plum buds belong to classes one and two, as this tree bears its blossom buds laterally on spurs and with some varieties of plums a large proportion of its fruits are borne on the one-year-old wood, there being one or two blossom buds formed beside the smaller vegetative bud which is produced in the axis of each leaf stem. Because of the nearness of the young fruit the new lateral growths are greatly limited by this close competition, resulting in trees of few main branches, giving a "feathered out" appearance. This is especially common among Japanese plums, as this species has many blossom buds instead of one or two which are clustered about each vegetative bud.

Plums which have few or no lateral blossom buds on the limbs produce more branches because of the stronger lateral growths on the second year wood and consequently become

more dense or matted trees. Such trees bear their fruit on the spurs which arise from the second-year wood. These spurs usually produce few vegetative buds and as the plum fruit bud develops only blossoms and fruit, the spurs perish after fruiting. Even when the end bud on the spur is a shoot bud, it has little chance to make much growth because of the many blossoms which are being produced on the same short spur. As a result of this habit very few plums are borne on wood more than two years old.

From these facts, it is apparent that plum trees should be pruned heavily to produce strong new wood which bears fruit buds or at least strong new spurs. The aim in pruning should be to cut heavily enough to produce a long new growth of at least two feet which would require heading back. Then each annual cutting gives strong fruiting wood and prepares for the next year's renewal.

The cherry has a less vigorous fruiting habit than the plum, although its buds belong to the same classes. Generally not over half of the lateral buds on the new limb growth are fruit buds. The fruit spurs have a terminal shoot bud and may persist and fruit for several years. They seldom live longer than three years, however, so practically no fruit is borne on wood which is more than four years old. Consequently on old trees that make a small annual growth of but three to four inches, the total fruiting area is a layer approximately a foot deep about the outside of the tree.

A lighter pruning will keep the fruiting wood of the cherry in a stronger, more vigorous condition than with the plum, because of the cherry's better spur habit and its tendency to produce better annual growths. Its stronger growing habit is probably due to the fewer fruit buds on the new wood, which would have a lesser tendency to check subsequent growths by excessive fruit production.

The apple is the most difficult of the tree fruits to keep in regular bearing. Its blossom buds are formed as terminal spur buds and in some instances as terminal and lateral buds on limbs. The apple fruit spur, which normally arises from two-year-wood, has a biennial fruiting habit instead of being annual as with the cherry. The spurs are, however, much longer lived as it is very common to find them to be fifteen to twenty years old. The apple fruit bud, which is usually a terminal bud on a spur, produces both blossoms and a vegetative growth. This growth, which is produced at the same

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time as the fruit, continues to grow during the next season and normally develops a terminal fruit bud. This blossoms and bears again the second year, giving the apple a biennial fruiting habit. Although some spurs may fruit every other year for twelve to fifteen years, it is more common for them to fruit only every three, four, or five years. Again, in some cases they fruit in successive years.

The pruning of old bearing apple trees is as much a problem of keeping the old fruiting wood in a vigorous condition as it is one of the production of new fruiting wood. The effects of pruning are very local, i. e., the response to pruning as indicated by the increase in vigor of the new growth takes place close to where the cut was made. The removal of a large limb has a very limited effect on the spur growth on a nearby large limb, although the terminal growth along the main channels of the sap flow may be considerably increased by the pruning. The proper pruning then, as indicated by the fruiting habit of the apple, would be a thinning out and heading back of the smaller fruiting limbs and old fruit spurs. This style of pruning reduces excess fruiting wood, invigorates the old spurs, and permits an even distribution of light and air throughout the tree, whereas the removal of larger limbs makes holes in the top and only slightly benefits other dense portions of the tree top.

Thus it can be seen how important it is to know the fruiting habit of the trees when determining upon the kind and amount of pruning to give the older bearing trees. If the new wood bears fruit, as in plums, prune heavily to produce new wood. If the older wood is fruiting wood, as in the apple, prune lightly.

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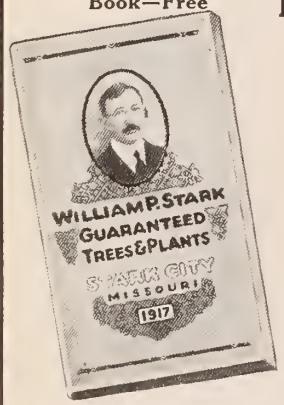

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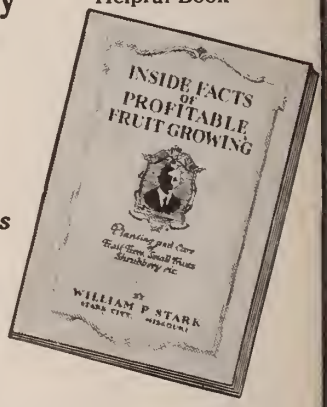

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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII Madison, Wisconsin, February, 1917 Number 6

Viburnum plicatum, sometimes called Japan Snowball. It's "snowballs" are not quite as large nor so nearly globular as those of the old-fashioned snowball but the Japan variety is almost immune against insect attacks.

A Few Words About Grafting

FOR BEGINNERS

Note (The following notes on grafting were first published in the Dec. 1912 issue of Wisconsin Horticulture, and periodically since that time requests have come for copies of the paper. To supply that need as well as to forestall further inquiries the article is reprinted).

The art of grafting is a simple one although often invested with mystery by the uninitiated.

Simply stated, the possibilities of grafting are about as follows:

You can go into your orchard next spring, saw off a few limbs from the old Hibernal apple tree, stick on some twigs of Wealthy and in a couple of years have a new top in the old Hibernal tree bearing Wealthy apples.

If you have a pet seedling apple and want fifty or one hundred trees, get some straight one-year apple roots, these are grown especially for nurserymen from any old kind of apple seed, cut the roots into three-inch sections, splice to each a twig from your seedling tree and you have root grafts that will produce orchard size trees in two years. There are many other possibilities, but these two are the most practical.

All orchard trees are grafted or budded and budding is one form of grafting, because there is no other way to get trees true to kind or name. The nurseryman knows the whole story and so do many of our readers, but for the benefit of any others who would like to try the trick an attempt is here made to tell how in simple words.

A part of it is written, a part told by pictures and the remainder left to the intelligence of our readers.

In the language of Goff, "Grafting consists in placing together two portions of a plant or of different plants, containing living cambium in such a way that their cambium parts are maintained in intimate contact. If the operation is successful growth will unite the two parts," * * *

Fig. 1. (A) A good grafting knife; (B) Cion used in root grafting, must be new, current season, growth; (C) Root used in root grafting, the larger rootlets should be removed.

Root grafting: The materials for root grafting consists of twigs of new (1916) growth which should be cut early in December and kept from drying until wanted and seedlings or stocks which may no doubt be had in limited quantities from any nurseryman. (These grew from seeds planted last spring.) The tools: a sharp knife and some twine or candle wicking soaked in grafting wax. Cut the roots into pieces of about three inches and the twigs (cions) five to six inches. Make sloping cut or cleft on both root and cion as shown in the picture (Fig. 2) and in such a way that the two can be united smoothly in a dove-tailed joint. The final operation consists in tying the parts with the waxed cord.

One very important point not mentioned so far is to have the cambium or inner bark of the cion in contact with the inner bark of the root when the two are fitted together. Make the joint so that it is smooth and even on *one side,* for in only one case in about seven thousand will it be possible to make root and cion fit on *both* sides. The very thin layer, called cambium, lying between the bark and wood, is the only active growing portion of either cion or root and the only part where growth can start, there fore these *must* be in contact. Don't try to find this cambium layer, because you can't, but just see to it that you have a good fit on one side of the joint and let it go at that.

When the root grafts are finished, pack in damp sawdust or sand

Fig. 2. Showing method of making root graft. All illustrations on this and following page from Principles of Plant Culture by E. S. Goff.

in the cellar until next spring and as soon as the ground can be worked plant in deep mellow soil, down to the top bud of the cion. Don't stick the root only in the soil, leaving most of the graft in the air, but bury until only an inch is visible.

Cleft grafting: For materials you will need a saw, butcher knife and mallet and cions of the same kind described in root grafting, but no roots. For cleft grafting any limbs from one to six inches in diameter may be used: saw these

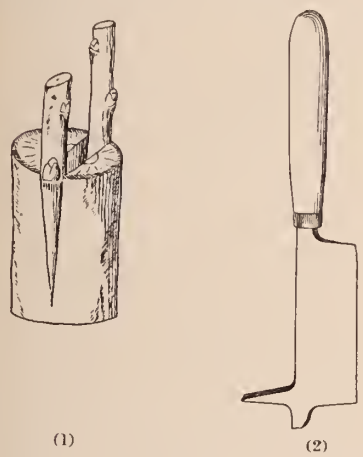

Fig. 3. (1) Showing methods of inserting cleft grafts. (2) A good type of grafting chisel.

off at least a foot from the trunk and split as shown in Fig. 3; cut two cions, each of about three inches and cut the lower ends wedge shaped, but much thicker on one side. Insert these as shown herewith.. keeping in mind the cambium story, and *cover the cleft and tips of cions with grafting wax*. This is not shown in the picture, but unless it is done failure will result.

Now this is about all we need to say, the principles are here, the details can be worked out. The grafting wax mentioned is made by melting together four parts resin, two parts beeswax and one part tallow. When melted, pour into a pail of water, grease your hands and have an old-fashioned candy-pull.

Grafting is lots of fun; try it.

A Spraying Problem

A member writes: "I have an orchard of five acres about ten years old. It is quite hard work to spray with hand power for some of the trees are quite large. Will you please give me names and addresses of reliable makers of power sprayers."

The names were furnished as requested and some suggestions added about as follows: A good power spray rig, one operated by gasoline engine, will cost at least one hundred and fifty dollars and it is doubtful if it is a good business proposition to buy one for that sum. A really efficient outfit costs two hundred dollars or more. The engine *might* be disconnected and used for other purposes but usually it is not advisable.

The interest and depreciation on the outfit would amount to about forty dollars a year. This is too much "overhead" for merely one part of the care a five acre orchard. Further, it is unnecessary.

There is a type of hand power rig with double-action pump, horizontal stroke, which may be used in connection with a 200 gallon tank that costs less than fifty dollars for both pump and tank. A pressure of seventy-five to one hundred pounds can be maintained with little difficulty with this pump.

Experts tell us that a very high pressure is required for best results, 200 to 250 lbs., and this no doubt is true but in actual practice it is found that very good results can be obtained with a hand power pump. The higher pressure results in economy rather than efficiency.

Cherry growers should read carefully the article on cherry leaf spot by Prof. Keitt in this number.

Sensible Remarks

The following letter to the Rural New Yorker and Editor Collingwood's reply show that "there are others" when it comes to taking a slam at farm orchards.

As to the future of the apple business you may get any opinion you like, all honest and all based on practical experience. Many people forget that both apples and potatoes are crops for a series of years and not crops to be estimated for one year. Most of us forget that two years ago potato growers were in despair over their prices. The crop was so large that it could hardly be given away, and some growers abandoned it in disgust. Had they kept on the prices for the past two years would have made a fine average, and that is what we must work for in both potatoes and apples. One year with another, potatoes will prove profitable anywhere within reasonable distance of a good market.

We think much the same is true of apples. Millions of trees have been planted and millions will follow. A large proportion of them will never pay expenses. They are planted on unsuitable soil. Baldwin and McIntosh planted on heavy wet land suitable for Spy, would never pay. Then many trees are planted off in faraway places where the cost of hauling and shipping eat up all the profits. Small orchards off in such places will not pay. The owner cannot make carload shipments, and must depend on buyers and commission men to handle his fruit. There will not be much profit on farms where the orchard is a sort of side issue. There may be several hundred trees, but some other farming is the main business and the trees do not get full care. There are usually too many varieties, and the fruit cannot be sold to advantage.

(*Continued on page 89*).

CRANBERRY NOTES

J. W. FITCH, Secretary

The 30th Annual meeting of the W. S. C. G. A. proved to be one of the most interesting and promises to be one of the most important ever held. The members seemed to be thoroughly awakened to the advantage of a more active interest and cooperation with the work of the experiment station. It is now felt the station will not have to be moved but can be continued and perhaps expanded if thought best. A sufficient supply of water for it can be secured from neighboring ponds, there seemed to be some decided opposition to moving it and while the lease cannot be at this time renewed, it appeared that by the time the lease expires, 1918, satisfactory arrangements can be made.

Dr. E. D. Ball state entomologist who was present gave the growers many valuable ideas as to the functions of an experiment station as well as the most practical methods of making experiments. Dr. Ball was unanimously made an honorary member of the association and chairman of a committee including President Searls and Mr. C. R. Treat who are to visit the station and assist in laying out work, in fact to give as much assistance as possible to the management of the station. Dr. Ball's hearty interest in the discussions was a great inspiration to the growers and all feel that in him we have secured a very great help in the solving of some of our hardest problems, those in the insect line.

The address of Mrs. S. N. Whittlesey, who was the delegate to the Horticultural meeting was also of the greatest interest to all and was a very well aimed rebuke to the growers for not taking advantage of the opportunity offered at the Horticultural meeting for a splendid exhibit of this fruit. There is no question as to the deep impression made by Mrs. Whittlesey as after she was through many growers said that they would see to it that they sent something for this display. A most beautiful exhibit can be made both of the fresh and cooked fruit and we will prove it at the next meeting of the Horticultural Society. President Searls address was as usual one of the very best given and contained many valuable suggestions as to growing methods, which will be reviewed in a later number. Mr. C. M. Seeker, who was in Chicago helping sell canberries told the growers that he wished everyone could go through his experience then they would really see the necessity of the utmost care in packing the fruit. Very fine reports were received from the northern bogs. Miss Ida M. Huyck, of Winona reported a crop of about 80 barrels to the acre which is a remarkably high average, the general average being 20 barrels or below. There is no question but that the business is going to boom and that in the near future the cranberry crop will again be a notable one of Wisconsins wonderful products.

In the evening the officers and directors of the Wood Co., National Bank of Grand Rapids tendered the growers a splendid banquet at the Hotel Witter which certainly was enjoyed to the utmost as also the theatre party afterwards also given by the same gentlemen. It is safe to say that the meeting will long be remembered by all who attended.

The Front Yard the Show Window of the Farm

The following clever story has been sent out to state papers recently, probably by someone at the Agricultural College. It's good dope and is given here for the benefit of horticulturists. Many of them need the gentle dig under the ribs contained in this skit.

"Say, Perkins! Why did you plant all these bushes and trees in your front yard? They must be a lot of bother when it comes to mowing the grass." This is what a Wisconsin farmer said to his neighbor one morning when he found him busy trimming the shrubs.

"Well, I tell you, Jones, it's like this," replied Mr. Perkins. "Five years ago, I got to thinking that the farmstead was the farmer's show window. The storekeeper spends a lot of money in fixing up his store window. Why wouldn't it pay the farmer to spend a little money on his?

"I have spent on an average of $10 a year for the last five years. First I graded and seeded the lawn and kept the grass cut. The next year, I planted a few bushes around the foundation of the house, and made the house seem more like our old home back east. Next, I planted these trees which you see here. I dug them up in the woodlot. The oaks and elms I used in the lawn, and the white and Norway pine, willows and basswoods I use as a windbreak. A man from the university helped me to select the trees and showed me how to arrange them. He also gave suggestions in regard to the planting of shrubbery. He showed me how a few red willows, thorn apples and vines would hide the old shed and the pig pen from the dining room window and from the road.

"The third year, I placed those hardy roses along the garden fence,

and planted the bushes on each side of the driveway gate.

"Last year I took out the straight path from the house to the main road, and put in the short concrete walk to the drive, and fixed the drive so that I could use that for a walk. That gave me this nice, big lawn in front of the house, and made it much easier when it came to the mowing. This spring I set out the lilacs, mock oranges, honey suckles and arrowwoods along the west yard fence, and put the flowers in front of the bushes by the house. Now my little show window is nearly complete, and all it will cost is the upkeep.

"I have told you, Jones, why I planted the trees and shrubs, and now I will let you be the judge whether it pays to spend $10 a year, for five years, in fixing up this farmer's show window."

Girls and Strawberries

A young lady who lives in Oconto County wants to earn some money and being a sensible person she is asking questions. Here are six of the questions. The answers to them furnished by Pres. Rasmussen.

Q. Is strawberry growing a profitable occupation for an individual? A. Yes.

Q. Is it a sure crop? A. We have not had a failure since irrigation was put into practice.

Q. How do you dispose of your berries? A. They are all sold at wholesale, locally or shipped to other markets.

Q. Do you realize a quart of berries on the average per plant? A. We grow only in matted rows so have no way of ascertaining. We picked last year at the rate of 800 16 qt. crates per acre.

Q. Have you had many failures and what as a rule was the cause of such? A. No. I think a large per cent of failures is due to droughts and leaf rollers. These leaf rollers usually work in the dry period and irrigation will control both.

Q. Is it possible for a girl to handle an acre of strawberries? A. Yes—outside the picking which of course she must superintend.

Q. What variety of berries do you prefer? A. We grow mostly Dunlap. In some localities the

This charming little view is entitled The Man With the Spade. Our skilled and versatile Vice Pres. is demonstrating the setting of strawberry plants. He is *not* listening to the Angelus but to some inoffensive remark by the camera man, made to attract his attention.

Warfield fertilized with the Dunlap produce larger crops but this good satisfaction. However it is is an exception rather than a rule. Where a very large fancy berry is wanted the Bubach gives very too soft for shipping and too light colored for canning.

In closing I will say I would give the same advice to a girl as to a young man. If possible work on a fruit farm for one season at least where you can get experience in grading, picking, packing, etc. This will give you a far better knowledge of the business and you will then know whether or not you care to embark in this business.

Have you read the Gentle Countryman this week?

For the Man Who Loves His Trees

J. V. Beyer

The man who loves his trees, not only plants them for the money he expects the fruit will bring him but he also cares for the appearance of his orchard.

It certainly is not a pleasing sight to see a lot of trees bend in all four directions of the hemisphere, particularly S. East as most of them do if no care is taken when young.

This has been the case with my own trees, for when I first started fifteen years ago had the same foolish idea that a great many men have, all I had to do was to plant them and leave the balance to the Almighty and he would tend to the rest.

Six or seven years ago after reading a good deal about fruit trees, of their care regarding cultivation, fertilization, moisture, pruning and the army of insects and diseases I had to fight I came to realize that I was utterly mistaken as far as the Lord was concerned, but that He gave us the tree, like everything else we have in this world, with the express understanding not only to plant it, but we to care and protect otherwise we would not get any fruit.

As I said before, about six or seven years ago I began to look after my trees and found also a great many of them leaning towards East and S. East on account of the strong pressure of the N. West winds. I tried various ways to bring them back in a straight position, but with little or no result.

In the fall of 1912 there was one tree which had not borne any fruit yet, which was planted 1905 leaned so much with two of its main branches toward East that I decided to cut them away, all it had left

(*Continued on page 89*).

Clean Cultivation and Thorough Spraying Promise Most Relief from Cherry Leaf Spot

Sturgeon Bay, Jan. 17—At a meeting of Door county fruit growers held on Wednesday, January 17, C. W. Keitt, of the department of plant pathology of the University of Wisconsin, reported upon investigations looking toward the control of cherry leaf spot which have been in progress here and at the Experiment Station for the past two years.

Leaf spot (also called "shot-hole" or "yellow leaf") is one of the most serious pests of the cherry in Wisconsin, and, unless controlled, makes the profitable culture of this fruit impossible in our more important cherry producing sections. For many years Wisconsin cherry growers have been able to control this disease by persistent spraying with Bordeaux mixture. However, the time and number of applications and the concentration of the spray necessary for best and most economical results have not been determined, and in certain years the foliage of many Bordeaux sprayed orchards has failed to go through the season satisfactorily. Furthermore, the high price of copper sulphate and the scarcity of labor have made it very important that the expense of the treatment be reduced. Consequently, there has been legitimate call from the cherry growers of the state for investigation of this disease with the aim of determining the most economical methods by which it can be efficiently controlled under Wisconsin conditions. Laboratory and field studies have been conducted at Madison, and for two seasons a field station has been maintained here at Sturgeon Bay. Mr. Keith expressed his appreciation to the people of Sturgeon Bay for having greatly aided the work by placing the laboratories of the high school at the disposal of the investigators during the summer months, and by cooperating individually in various lines of experimental work.

ATTACKS FOLIAGE AND FRUIT

"The leaf spot disease," said Mr. Keitt, "affects not only the foliage, but also the fruit. On the leaves, it appears as small roundish brown spots which often occur so abundantly that they run together and form large irregular dead patches. Under certain conditions, the dead spots drop out and on account of the resulting appearance of the leaves the disease has often been called shot-hole. Badly affected leaves ordinarily turn yellow and drop. This has led many to call the disease yellow leaf. It should be borne in mind, however, that certain other troubles may have very similar symptoms, and that there is danger of confusing leaf spot with other foliage injuries. In cases of doubt, specimens should be sent to the department of plant pathology of the university for identification. On the fruit or the pedicels (stems of the fruit,) the disease may appear as small brownish or reddish spots. The chief injury to the fruit, however, results from the loss of vitality of the tree, due to the effect of the disease on the leaves. In case of severe attacks, the fruit may fail to mature, and wood and bud formation are seriously hindered. Repeated severe attacks may kill the tree.

DEAD LEAVES HARBOR THE DISEASE

"Leaf spot is caused by a fungus (a low form of plant) which lives in the diseased parts of the cherry in the summer and passes the winter in the dead leaves on the ground. In the spring, it produces spores (winter spores), like the seeds of higher plants, but too small to be seen with the unaided eye, which are carried in the air and lodge on the leaves. Here they germinate, grow into the leaf, and produce the disease. On the under surfaces of the resulting spots small "blisters" usually develop. These break open and a whitish material oozes out. This is made up of thousands of spores of another type (summer spores) which serve to spread the disease very rapidly.

INTIMATE ACQUAINTANCE NECESSARY

"In order to fight the disease to best advantage, it is necessary to know not only its cause, but also a great many facts concerning its development. It is necessary to know the condition of the fungus throughout the year, when and where it produces spores, how these are scattered, how they produce infection, what plants harbor the disease, what conditions favor or hinder its development, and the like. Many of these matters have already been determined and others are being studied further. The information thus obtained not only promises to be of much value in working out the most economical and efficient spray treatments but in developing a further method of fighting the disease, as follows:

EARLY CLEAN CULTIVATION HELPFUL

"The studies of the leaf spot fungus have shown that the weakest point in its life history occurs when it passes the winter in the dead leaves on the ground. If all these dead leaves would be destroyed, and if the disease harbored on no other plants, spraying would not be necessary. While it is not practicable to dispose of the dead leaves in such a way as to make spraying unnecessary, it is possible greatly to strengthen the spray schedule, and probably eventually to cut down the number of appli-

cations, by turning under as many as possible by clean cultivation in the spring before the spores or seeds of the fungus are set free. Our studies of the fungus have shown that under Wisconsin conditions spores begin to be discharged into the air at about the time the blossom buds of the cherry break open; so cultivation should preeede this. Most Wisconsin growers cultivate at about this time anyway. Therefore, much may be gained, with little additional expense, by making the cultivation as clean as possible, instead of leaving unturned strips or large blocks about the bases of trees.

CONDUCTING SPRAYING EXPERIMENTS

"During the past season spraying experiments were conducted with the following aims: (1) to find the time and number of applications and the concentration of Bordeaux mixture necessary for most economical and efficient control, and (2) to develop, if possible, a spray treatment which may be satisfactorily substituted for the Bordeaux treatment, should high prices of copper sulphate or other reasons make this desirable. While it is not possible to draw final conclusions from this work until it can be repeated under the conditions of other seasons, the control of this disease is of such practical importance that the following brief statement of the more important results to date seem desirable:

"In connection with these results, it is important to remember that leaf spot ("yellow leaf") was unusually severe in its outbreak early in the season, but made little progress, even on unsprayed trees, after the hot dry weather came on in late July. At this time unsprayed check trees in the same orchard with the experimentally sprayed trees had lost more than 60% of their leaves, and the remaining foliage was badly diseased. Counts made on one unsprayed tree on July 14 showed that it had already lost over 95% of its leaves. Such trees failed to mature their fruit and went into the winter in very bad condition. While infection was heavy throughout the section during early summer it was unusually severe in this experimental orchard, because the heavily infested leaves of the year before were purposely left undisturbed to furnish an abundant source of infection, and to make the test of the sprays as severe as possible.

"*Time and Number of Treatments.* Bordeaux mixture, 4-4-50 (4 lbs. copper sulphate and 4 lbs. of lime in 50 gals.), was applied: (1) just before the blossoms opened, (2) just after the petals fell, (3) about two weeks later, and (4) just after the fruit was picked. In these and all other applications arsenate of lead powder, at the rate of 3/4 lbs. in 50 gallons was added to the fungicide. On the trees which received all four treatments the disease was controlled excellently. Where the treatment before the blossoms opened was left off, the control was as satisfactory as where the full four treatments were given. Where the second or third treatment was omitted, the disease was not controlled, and much foliage was lost. Where the last treatment was omitted, the results were about as good as where it was applied. It should be remembered, however, that the disease was checked by hot weather before this treatment was applied, and made little further progress even on unsprayed trees.

"These results show that, under the conditions of these experiments, the treatment before the blossoms opened was of little, if any, value for leaf spot control, and that the disease was well controlled by two applications of Bordeaux, 4-4-50, (1) just after the petals fell, and (2) about two weeks later. There is every probability, however, that an additional application after harvest would have been needed, but for the checking of the fungus by the hot dry weather.

"In timing the first treatment, it is very desirable to wait as long as safety permits, in order to cover as much of the rapidly increasing leaf surface as possible. To test the effect of delayed applications, a plot was sprayed only twice with Bordeaux mixture, 4-4-50, (1) about 8 days after the petals fell, and (2) about three weeks later. At the time of the first spray, therefore, the trees were in practically full foliage. The disease was controlled as well on this plat as where the four treatments were given. Again, however, it should be remembered that a treatment after harvest might have been necessary under other seasonal conditions.

"*The Concentration of the Spray.* Plats were sprayed comparatively with Bordeaux, 4-4-50, 3-3-50, 2-2-50 and 1–1–50. The 3-3-50 formula gave as good results as did the 4-4-50, and the 2-2-50 was only very slightly less effective. The 1-1-50 formula was too weak for satisfactory results, but even that strength gave a fair control. It seems highly probable, therefore, that growers may be able to save spray material, without loss of efficiency of the treatment. The 3-3-50 formula appears to be safe to recommend, but weaker formulas should be used only experimentally until further evidence is at hand.

TRY SUBSTITUTES FOR BORDEAUX

"In the attempt to find a treatment that might be substituted for

(*Continued on page 90*).

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The Institutes

The Fruit and Garden institutes conducted by Pres. Rasmussen and Mr. Bingham are proving a big success. Twelve of the special institutes have been held and all were well attended. These two practical men are preaching the gospel of horticulture in Wisconsin as it was never preached before. We have had fruit men at the regular farm institutes for years but usually the fruit man would drop in for a half hour talk sandwiched between poultry and alfalfa and dodge quickly out of town in order to make the next institute and repeat the performance.

This was very good in a way but not good enough.

By the present plan a smaller audience, men and women who are interested in the home orchard and garden or perhaps in the market side of fruit growing, gather for a two-day study of problems of pruning, spraying, cultivation, gardening etc.

What we started to say is this:

From Feb. 8th to March 8th the nine remaining institutes of the original list published in the December number of Wisconsin Horticulture will be held as follows: La Farge, Feb. 6th and 7th; Richland Center, Feb. 8th and 9th; West Bend, Feb. 13th and 14th; Egg Harbor, Feb. 15th and 16th; Waupaca, Feb. 20th and 21st; Weyauwega, Feb. 22nd and 23d; Harmony Corners, Feb. 27th and 28th; Green Bay, March 1st and 2nd; Eau Claire, March 6th and 7th.

Every member of this society who lives within a radius of five miles of any of these points has a two-fold duty to perform; first to attend the institute; second to take along some one who does not believe that it pays to plant fruit trees or make a garden. Don't wait for an invitation, you have one already.

Let's Hear From You

Now is the time to write something for Wisconsin Horticulture; next spring you will be too busy.

There *must* be something of past experience stored up in your mind that will be of interest and value to our readers. Remember, but few readers of Wisconsin Horticulture care for philosophy, prophecy or fine-spun theories but they *do* want plain, simple directions for doing the essential things in garden and orchard. What variety of garden peas do you plant? Why? How do you get them so early? What are your favorite varieties of all the garden vegetables you grow? You have finer asters or sweet peas than your neighbors, how do you manage to do it? Did you spray the apple trees last year? What results? Do you know of any handier and easier way to do things than the ordinary way?

These and a thousand other questions that amateur gardeners and fruit growers delight to read. It will help you to write them and it will help others. Try it once. Don't feel that you must frame finely polished sentences, that you must be a skilled writer, that part counts least of all. The best contribution ever sent to this office and one that caused much favorable comment was the first attempt by a practical man who sent with it a letter of apology; that's the kind that are worth their weight in gold.

The Best Horticultural Paper

A person way up in Rusk county where the effulgence of Wisconsin Horticulture (effulgence is defined by Webster as, "extreme brilliancy, radiant splendor"); has not yet penetrated asks us to name the best horticultural paper published in the United States. Modesty, that diffidence that has always been our chiefest charm, compelled us to be content with the statement that there is no other journal of horticulture that can compete, in some ways, with Wisconsin Horticulture. That and a copy of the paper was as far as we cared to go. Then later, when in a more trivial mood, the following comments on other papers were added: From the standpoint of journalism Better Fruit, monthly, published at Hood River Oregon is the best horticultural paper in the country. It is

high class in every particular but is devoted wholly to the Pacific coast fruit belt and therefore of little interest to Wisconsin fruit growers. Green's Fruit Grower, monthly, edited and published by Charles A. Greene is a nice fireside journal containing much fatherly advice and much of reminiscence but deals too much with the past and not enough with the present and the future.

The Fruit Grower, twice a month, of Saint Joseph, Mo., started out bravely ten or twelve years ago and for a time was the best fruit growers paper in the country, full of practical ideas and up-to-date in every particular. It is still an excellent paper for the commercial apple grower and is well worth the price asked, 50 cents a year.

All things considered the paper that contains the most of practical information on horticulture, fruit, flower and vegetable growing both for the amateur and the professional is the Rural New Yorker published at 333 West 30th St., New York City. It is supposed to be a general farm paper but is really a horticultural paper.

It is published weekly at $1.00 a year.

Sensible Remarks

Continued from page 83).

The future will make it more and more clear that the profit in the apple business will go to men who make a regular business of it. It must be a special business well located near markets, well handled and large enough to supply a full trade through the season. The apple market in the large cities has never been half developed. It seems to us that the apple business is just about the reverse of the poultry prospect. The large, special hen farms rarely pay as well as the smaller, well kept flocks on general farms or gardens. The side issue orchard rarely pays, nor does the great orchard company. The orchard of medium size, well located and handled as a special business, will pay a fair profit through a term of years."

For the Man Who Loves His Trees

Continued from page 85).

was one branch toward N. West and one S. West.

To my utmost surprise this tree in the following season not only came back, but the branches from the other sides closed in the vacant space and after pruning it twice since that time, looks as normal as any of them, besides which it has borne fruit ever since.

I set to work at once after noticing this and cut branches away on all the rest which were leaning toward one side and found trees planted from 1908 to 1910 came back straight and others planted earlier held their position as near as I could see.

If anybody is interested in this and should try it, I would be glad to hear of results therefrom.

The Boy Scouts have a motto; "do a good turn every day." This might well be adopted by W. S. H. S. members with slight modifications: "Get a new member every week."

Be loyal to your state and to your trade, ask for baked apple at hotels and restaurants instead of grape fruit.

If your orchard trees are unprotected you must expect to lose some of them. Rabbits and mice prey alike on the just and the unjust.

Applicants for life membership must be recommended by a member in good standing. Blanks will be sent on application to the secretary.

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

Clean Cultivation and Thorough Spraying Promise Most Relief from Cherry Leaf Spot

Continued from page 87).

Bordeaux, should high prices or other reasons make this desirable, the following sprays were tried, four applications being made at the same time as the Bordeaux treatments: lime-sulphur 1-40 (1 gal. commercial concentrate, 33° Baume in 40 gals.) and 1-30, self-boiled lime-sulphur 8-8-50 (8 lbs. lime and 8 lbs. sulphur in 50 gals.), "atomic sulphur," 5-50 (5 lbs. in 50 gals.), and "barium sulphur", 3-50 (3 lbs. in 50 gals.). Self-boiled lime-sulphur, "atomic sulphur", and "barium sulphur" failed to control the disease satisfactorily. Lime-sulphur, 1-40 and 1-30, controlled the disease satisfactorily (about equally well), though not quite so thoroughly as Bordeaux. At the end of the season, however, the foliage on the lime-sulphur plat was quite as good as on the Bordeaux sprayed trees, due to the fact that some Bordeaux injury appeared in the latter part of the season, whereas practically no injury resulted from the lime-sulphur. Lime sulphur is a distinctly weaker fungicide than Bordeaux, and to control cherry leaf spot successfully under Wisconsin conditions, it must be applied very thoroughly and at the right time. Also lime-sulphur with arsenate of lead appears to be a stronger fungicide than lime-sulphur alone. These facts may account in a large part for the conflicting results of growers who used lime-sulphur last year.

"These results indicate that lime-sulphur is worthy of further trials, particularly in connection with early clean culture.

RECOMMENDS SANITATION AND SPRAYING

"Final recommendations will not be possible until the experimental work is completed. Even then it is unlikely that a single recommendation can be made to meet the needs of all growers. However, in the meanwhile, the following treatments appear most promising:

1. *Sanitation.* Where practicable, turn under the dead leaves in the spring as completely as possible by clean cultivation before the blossoming period of the cherry. This will destroy the greater portion of the spores or "seeds" of the fungus.

"2. *Spray* with Bordeaux mixture, 3-30-50, or 4-4-50, or lime-sulphur, 1-40 or 1-30: (1) when petals fall, (2) two to two and a half weeks later, and (3) just after the fruit is picked. Arsenate of lead (powder, ¾ to 1 lb. or paste 1-½ to 2 lbs. in 50 gals.) is added in each application for insect control. In the case of lime-sulphur, omission of the arsenate of lead appears to lessen the value of the spray for leaf spot control. The applications should be *very thorough, especially in the case of lime-sulphur*, and care should be taken to cover the *under* as well as the upper surfaces of the leaves. If the dead leaves are very thoroughly turned under before the blooming period, it is likely that the first treatment may profitably be delayed until several days or a week after the petals are off, in order that more foliage may be covered."

Making the Home Orchard Pay Its Way

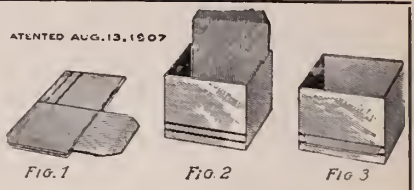
Victor Felter, Iowa.

The home orchard has fallen into dis-regard and dis-repute on the average corn belt farm. The small orchard is usually as unsightly as it is unprofitable. Many a farmer argues that he can grow corn and buy what few apples they need cheaper than they can be grown at home.

There are many reasons why most of the small orchards do not pay. Many times a poor selection of varieties is the reason. An over supply of summer sorts supplies plenty of cider and pig feed but not much profit. The surplus should be turned into cash. The home orchard should be planted to varieties that will, as nearly as possible, supply the family with fresh fruit the greater part of the year.

The most common cause for lack of profit is the common neglect. The trees are not properly pruned if pruned at all, and the ground is not cultivated. Spraying, the most important of all, is not practiced except in the larger commercial orchard.

The apple crop in Iowa for 1916 was estimated to be only 32% of a full crop, yet I made a net profit of $448.83 on one acre of apple



BERRY BOXES

Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

trees on the new farm recently purchased near Des Moines. The method employed was so simple that it is really worth telling.

The trees were uneven in size but most of them were about fifteen years old and had been neglected like they often are. There was a good heavy blue-grass sod and the live stock that had eaten the grass had broken many limbs off. The trees had not been pruned except to cut off some of the broken lower limbs.

Pruning was done in March and April, while other work was not pressing. A good many of the taller limbs were cut back to a good sized side limb. Other limbs were removed where they were too thick or were growing across each other. The limbs were cut off very close to the larger limb or trunk, so that they would grow over more rapidly.

A coat of barn yard manure was plowed under early in April. The ground was disced or harrowed frequently all summer and no crop grown between the rows of trees.

A thorough job of spraying was done when most of the petals had fallen and a second spray given two weeks later. A third spray in June would have been beneficial, but was not applied. Two and one-half lbs. of lead arsenate and 1¼ gal. of lime-sulphur solution to each 50 gal. of water was the formula used both times. The lead-arsenate is a strong insecticide and its chief mission is to destroy the coddling moth, or common apple worm. The lime sulphur is a fugicide and combats the apple scab very successfully.

Eighty dollars worth of summer apples were sold, the Red Astrachan and Duchess being the first to ripen, followed closely by Sweet June and Cole's Quince. These were taken to the store in 20 lb. baskets. These early varieties were followed by Early Jce, Maiden Blush, Snow, Rambo, Grimes Golden, Pewaukee, Jonathan, Ben Davis, Mo. Pippin, Willow Twig, and Red Romanite. The first apple sauce was ripe the latter part of June and some of the longer keepers will still be on hand next May or possibly in June.

Every one of the ninety six trees bore enough fruit so that the tree could be identified by its produce. The Jonathan, Grimes and Ben Davis bore very full crops which brought splendid prices. Some of the choicest brought $2.00 per bushel box. A total of $465.83 has been received from fruit sold from this acre. The spraying cost $8.00, baskets, $9.00, leaving a net profit of $448.83. Apples used and on hand for family use will easily pay the interest on the two hundred dollar land, labor of harvesting and marketing the entire crop.

The writer is not familiar enough with Wisconsin conditions to make recommendations as to varieties. It is usually safe to stick pretty closely to standard sorts and let the other fellow do the experimenting.

STRAWBERRY PLANTS

100,000 choice Strawberry Plants. Also Red and Black Raspberry. Asparagus and Rhubarb Roots.

These plants will not be dug more than twenty-four hours before shipping. All stock guaranteed. Hot bed plants in season. Write for prices.

Rasmussen's Fruit Farm
Oshkosh, Wisconsin

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
Lake City, Minnesota

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON
SHEBOYGAN, WISCONSIN

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
For Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year
Kellogg's Nurseries
Box 77, Janesville, Wis.

High Priced Raspberry Plants

A little incident came to observance a few days ago which is only one of the many which comes to me from time to time.

A friend came to me with a bill for nursery stock that he had ordered of a nursery agent asking my opinion in regard to the varieties, prices, etc. This bill is as follows:

18 Blowers Blackberry plants
107 Rathbun Blackberry plants
75 Gregg blackcap
50 St. Regis red raspberry

250 total. Price $11.25.

I might have overlooked the exorbitant price charged for this stock if it had not been for the fact that most of the varieties recommended by the agent are not reliable and prove a disappointment to say the least. My experience with the Rathbun blackberry is that it has proved a failure here in Wisconsin and from most of the fruit growers I gather they have had about the same experience.

The Blowers is a better variety but I would not prefer it to the Eldorado, Stone's Hardy or Ancient Briton as it is not as hardy and more difficult to handle than the above named standards.

The Gregg blackcap is not a success here. Plum Farmer, Cumberland or the Columbia Purple Cap I find are far more profitable and reliable.

The St. Regis was the only variety I could recommend in the list and I advised two varieties of red raspberries instead of one, St. Regis and King.

My opinion was that $5.00 would buy direct this same stock from most any of the nurserymen advertising in WISCONSIN HORTICULTURE.

Now in regard to the farm orchard I find about the same conditions prevail. The nursery agent knowing nothing of fruit growing advising the setting of a lot of novelties and untried varieties at an exorbitant price which in nearly every case proves worthless.

I do not object to selling novelties and untried varieties if they are sold as such but to sell and recommend these in place of good standard varieties (which is being done all over the country) I think it is almost equal to a crime.

Usually the nursery agent is so bigoted that it is a waste of time to try to advise him.

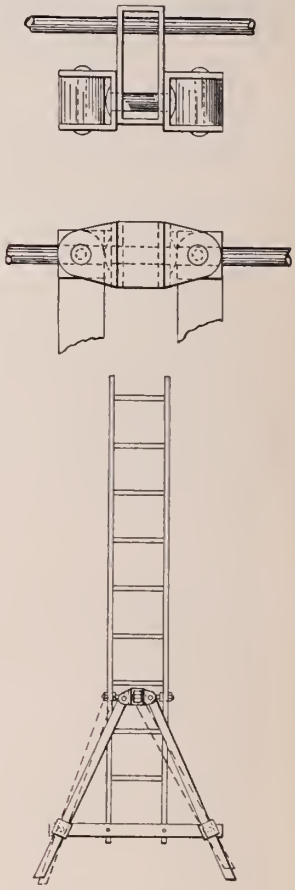
Henry Blackman.

Something New to Meet Ladder Difficulties

G. H. Townsend

The writer has tried many things to meet the loss of time adjusting ladders to uneven ground, and to prevent pickers from knocking down apples putting ladders up into the trees, and has met the difficulty by inventing a ladder with adjustible legs pivoted to clips that are pivoted to a band link which swings up and down and also slides back and forth on a cross rod between the sides of the ladder.

The general plan of the link, clips and mounting is shown in the upper drawing. A back view—elevation—is shown in the middle drawing. The adjustible legs may be spread as widely at the bottom as desired to brace the ladder, and are held by passing through a link pivoted to a cross bar attached to the base of the ladder. The band link on the cross rod swings so that when the ladder is lifted the legs drop enough to loosen the legs in the links on the cross bar, when the ladder is set on the adjustible legs and raised to a vertical position the legs automatically adjust themselves by pushing the band link on the cross rod enough to shorten the leg on the high side and let the leg down on the low side, so that the ladder automatically adjusts itself to level ground, bumps, holes or side hill and locks by sliding the leg holders down the adjustible legs.



A back view is shown of an ordinary straight ladder. For short ladders—ten or twelve feet—a third leg is added. It contributes to safety and saves its cost in time and fruit in a few days use. The views are from part of patent drawings.

The hardy gaillardia is among the best perennials to furnish cut flowers. It blooms well about the last of June and the flowers stand up well.

Report of Delegate to Northern Illinois

The Fiftieth Annual Convention of the Horticultural Society of Northern Illinois was held at Princeton, Ill., December 5th and 6th, 1916, under as favorable weather conditions as could be imagined. The attendance, while not large, was of the class which represents large interests, several of those present owning orchards of one hundred acres and over. Their arrangement of program differs from ours in that but two or at most, three papers are presented during a session, permitting a large amount of time for questions and discussion but of necessity narrowing the range and variety of the program.

Vice-President Bryant is known to most of our older members and President Brayton will be remembered as the genial Illinois delegate at our last convention. He did all in his power to make pleasant the stay of the various delegates from the other states.

A good exhibit of fruits and vegetables was shown in connection with the convention, the apple show comprising Northwestern Greening, Salome, Senator, Delicious, Black Ben, Ben Davis, Winter Banana, King David and others. The larger part of the exhibit came from the farms in the immediate vicinity, rather than from the large commercial orchards, and while comparatively free from defects, nevertheless showed some signs of curculio and other blemishes.

A very enjoyable interlude to the regular program was furnished by the citizens of Princeton, who took the visitors and delegates for an automobile excursion through the surrounding country. Several miles of the new state concrete roads were traversed. A stop was made at the L. R. Bryant home and the cider press, cider vats, vinegar vats and barrels were inspected.

The Progressive League of Princeton tendered a banquet to the conventionists, Thursday evening, thus completing in a most delightful manner, the two days semi-centennial of the Northern Illinois Horticultural Society.

Independently of Wisconsin Michigan has worked out in similar manner and to similar conclusions the life history and control methods of potato blight.

Among other points of interest which cropped out at the convention were the following:

(*Continued on page 94*).

WISCONSIN HORTICULTURE

A WISCONSIN MAGAZINE published by the **WISCONSIN STATE HORTICULTURAL SOCIETY** containing each month articles on fruit, flower and vegetable growing written by **WISCONSIN** growers for **WISCONSIN** conditions.

WISCONSIN HORTICULTURE is not published for the purpose of making money but exclusively for the benefit of members of the **STATE HORTICULTURAL SOCIETY.**

It is better,—for **WISCONSIN** people, than any other horticultural paper published. It tells the best varieties to plant in **WISCONSIN**, the best methods of cultivation for **WISCONSIN**. It's a paper for the home gardener and fruit grower as well as for the big grower.

"WE ANSWER QUESTIONS" is the slogan of the Society. Every question answered, first by personal letter and then in the paper.

Every dollar received for fees (subscriptions) and advertising is put into the paper.

Honest dealers advertise in **WISCONSIN HORTICULTURE** and only that kind. The other kind cannot buy space.

The price, 50 cents, includes membership in the **STATE HORTICULTURAL SOCIETY.**

A dollar bill pays for two years.

Send Fifty Cents, coin, money order or check to Frederic Cranefield, Secretary, Madison, Wis., and get a receipt for Annual Membership and Subscription to **WISCONSIN HORTICULTURE** for one full year.

A DOLLAR BILL PAYS FOR TWO YEARS

Is This Paper Worth Twenty-Five Cents A Year To You?

Is Membership in the State Horticultural Society Worth Twenty-Five Cents a Year?

It will cost you just Fifty Cents a Year for both; neither is sold separate.
A cloth bound copy of the Annual Report is also sent Free to every member.
You may also ask questions, which will be answered by personal letter.

What more do you want for that Half Dollar?

Send It to the Secretary at Madison or hand it to Pres. Rasmussen or Mr. Bingham at the Institute.

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

The Kickapoo Valley

WISCONSIN'S FAVORED FRUIT DISTRICT

Our Specialty: Planting and developing orchards for non-residents.
A few choice tracts for sale. If interested, write us.

The Kickapoo Development Co.

Gays Mills, Wis.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES.
All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

Report of Delegate to Northern Illinois

Continued from page 93).

The Illinois orchards are planted much farther apart—30 to 40 feet—than here in Wisconsin, and seem to be longer lived.

In spite of the fact that they can raise the domesticas it seemed to be the general opinion that the Wyant and Terry were better market plums as well as the Surprise and some others.

An investigation of the apple scab in Illinois leads to the conclusion that the destruction of the leaves is not feasible but that its prevention is by spraying, preferably with the lime sulphur solution.

HARDY PERENNIALS AND PANSIES

Grown for

Nurserymen Florists
Landscape Planters Gardeners

Send us your want list for prices. Questions gladly answered.

WILLIAM TOOLE & SON

(Garry-nee-Dule) BARABOO, WIS.

Steps have been taken to secure the passage of legislation, whereby the owners of all Illinois orchards shall be obliged to spray them, and to use other recognized means of preventing or restricting insect pests and plant diseases. If done this promises to have a far reaching effect upon Illinois Horticulture.

C. L. Richardson,
Delegate.

Buy from our advertisers.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

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INSECTICIDES AND FUNGICIDES

Lime Sulphur

Arsenate of Lead
Dry and Paste Form

Bordeaux Mixture **Nicotine Solution**

Kerosene Emulsion, Etc.

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WRITE FOR CIRCULARS AND INFORMATION

How to Grow Good Fruit for Your Table or Market

The farsighted, thoughtful man plans ahead and finds out what are the best varieties for his locality; how to choose a good tree to start with; how, when and where to plant; how to prune, care for and cultivate. All these facts are told clearly and concisely in our reliable books.

Wm. P. Stark's 1917 Catalog Free

It tells you how to choose the best varieties for your section, how to know good trees; the right age and size to plant; what distance apart, number to acre, ripening dates, etc.; why the best investment is in healthy, vigorous trees with heavy roots and trained tops; why we can and do grow such first-class trees which bear younger and thrive everywhere any of its kind will grow.

"Inside Facts of Profitable Fruit Growing"

It tells how to plant, prune, spray, cultivate, dynamite, fertilize; how to pay for the orchard with fillers, etc. 88 pages. Many pictures, drawings, diagrams. Contains no advertising. Sent free with orders of $2.00 or more. Price 10c. Money refunded, if not satisfied. "Worth its weight in gold." "I saved those two trees just from reading your book."

Choice Apples for Wisconsin Growers

Our Ozark Mountain grown hardy trees have unusually heavy, wide-spreading roots. We grow one and two year apple trees only. We offer such tested, dependable varieties as Delicious, Duchess, Dudley, Gravenstein, Livland, Raspberry, McIntosh, Red Astrachan, Wealthy, Yellow Transparent.

"The trees purchased from you arrived in first-class condition, and were all fine trees."—O. E. Westerfield, Port Atkinson, Wisconsin.

"We were very much pleased with the nursery stock received from you last spring, all of which did well."—Vance Bros., Lima Center, Wisconsin.

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No Agents—We Sell Direct From Nursery Only

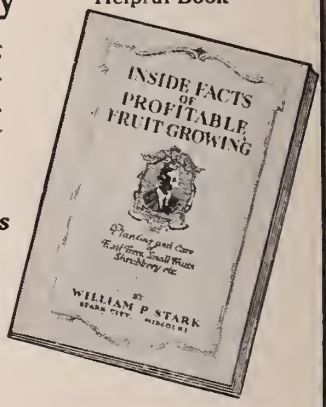
We thus avoid such causes for dissatisfaction as wrong advice, mixing labels, delays in delivery and indirect responsibility. We help you both before and after you buy our trees. To secure reliable information, high quality and safe delivery at reasonable prices, buy direct from our free catalog.

Send coupon below with 10c for these valuable books

Wm. P. Stark Nurseries

Box 23D *Stark City Mo.*

Send 10c for This Helpful Book



WM. P. STARK NURSERIES CO. Stark City Mo. GUARANTEED HARDY TREES

To Wm. P. Stark Nurseries, Box 23 Stark City, Mo.

Please send me your new catalog free. I enclose 10c for your "Inside Facts of Profitable Fruit Growing." I am interested in the following number of trees and plants_____

Name _____

(Write address, giving County and Street or R. F. D. No. on margin below.)

☐ Delicious Apple ☐ Cherries ☐ Crapes
☐ Dudley Apple ☐ Plums ☐ Bush Fruits
☐ Apples ☐ Pears ☐ Roses and Shrubs

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII Madison, Wisconsin, March, 1917 Number 7

American Linden or Basswood, Tilia Americana, one of the choicest of street trees for this climate. It is equalled only by two others, the White Elm and Norway Maple, and excelled by none.

A Village Fair

MRS. GEO. MOORE, EAST MILWAUKEE.

When the East Milwaukee Civic Association was considering how it might best serve the Community, it was suggested that a "Village Fair" was one of the ways in which a community spirit might be developed. We had had a very happy Christmas and were eager to follow up the impression made at that time. We read with interest of "flower shows", "fruit shows", and all sorts of "shows", and we felt that we too, could make a contribution to the great movement of "getting together in the interest of all that helps the cause of democracy." Does this seem a very ambitious ideal for a village fair? I am very sure that in the early stages we did not consciously formulate so large a program. Organized in the right spirit for the common welfare, those enterprising men who called us together, we who responded, did build a society that has within itself such a possibility. It is an example of what the coming together of ordinary folk may mean. The individual ineffectual, united in purpose with his kind, mighty. So much energy goes astray for the lack of co-operation in districts where one's next door neighbor is a stranger. Does it seem too much to hope that as people group themselves more and more, as they are doing in country and suburban centers, they will come to feel themselves united in a common cause.

There still remained an unoccupied strip with waving cornfields to isolate us from the city and its stifling mass. This was our chance to develop a community consciousness. For a whole year "the fair" was the objective point toward which we all worked. At first it was just one of the topics of conversation, sometimes taking precedence over the eternal "heating question."

On February 11th and 12th we held a Community Institute, through the kindness of the Extension Department of the University of Wisconsin, and of the Horticultural Society. The latter generously sent Messrs. Rasmussen and Cranefield, upon whom we are glad to place a large share of the responsibility of the success of our plans.

The project was officially launched with the following announcement, which appeared upon the program,

"The Institute is the first step towards a 'VILLAGE FAIR'. "This will be held early in fall, and amateur gardeners will have "an opportunity to exhibit their cabbages, turnips, etc. the women, "their baking and canning, and children their school work, and vegetables and flowers from their gardens," together with announcements of lectures, which crowded the days with information and inspiration. This prelude is to make it clear that the Fair of September 9th and 10th did not spring into being fully equipped, but the outgrowth of months of preparation. I think I have never seen so much included in two short days. When I picked up the program among the exhibits at the State Fair, I had a little thrill of pride that we had really carried it through.

But if we learned how to plant a "show" carrot—and by the way—the Chairman of the Fair, upon being congratulated upon the "blue ribbon" attached to his carrots, confessed that he had followed Mr. Rasmussen's directions exactly. We did not learn only how to plant, but, better still, we learned to know our neighbors and to cooperate with them and the "community spirit". Why, you just see it grow!

One of the best things we did at the Institute, was to have a "Community Cafeteria" in a near-by church. It seemed necessary, in order to have everybody's husband on hand in time for the lectures, to serve supper, and out of this need, grew a really indispensable part of our Institute. This was managed by a host of women who had never worked together before. Many had never even seen each other, but they made a success of it and paid the expenses of the Institute. The greatest result, however, was the good-fellowship that developed in the kitchen and at the tables. You can't help speaking to your neighbor when you are standing in line with him, with a tray under your arm, or sitting opposite to him at a small table. Those who couldn't be on hand to share the kitchen fun, in their own homes concocted the most beautiful baked beans from famous family recipes, until a bushel of beans, and many formulas, were transformed into savory dishes that stood on the tables and relieved the anxiety lest some one go hungry. Indeed they were so numerous that the thrifty cooks bought them for the Sunday night lunch that nothing should go to waste. They live in memory and bring a smile, to this day. The lectures were preceded by "Community Singing" and Prof. Dykema assured us we were a "very musical company", but then, as everybody knows, he can make even the tuneless sing. We ought to have organized a Choral Society. We will, some day, but we did form Home Economics and Gardeners' Clubs.

Mr. Rasmussen and Mr. Cranefield came again and our plans went on. Incidentally, we learned some "cellar gardening". Then

(Continued on Page 106)

An Apple Packing and Grading Bill.

Delegates from eight states met at St. Louis Jan. 26th to agree, if possible, on a uniform bill regulating the packing and grading of apples. The following measure drawn by W. M. Scott of the Federal Bureau of Markets was approved by every member of the conference. This bill has also been approved by the Board of Managers of this Society and introduced in the Senate of Wisconsin by Senator C. E. Everett.

Standardization is essential to the successful conduct of any business, fruit growing no less than the making of machinery. Congress thru the Bureau of Markets has fixed standards for barley and corn and will extend this to other grains.

We *must* have some fixed standards for apples if we ever hope to establish a reputation for Wisconsin fruit. There are many perfectly good arguments in favor of this bill, in fact it is rather difficult to see where there can be any serious objection to it. The bill has been introduced in several states and at the recent meeting of the Eastern Fruit Growers Association in Washington a committee was appointed to take the measure to Congress.

Members who are interested in this bill will be kept informed of its progress by the secretary on request.

AN ACT TO FIX STANDARDS FOR APPLES WHEN PACKED IN CLOSED PACKAGES, AND FOR OTHER PURPOSES.

Sec. 1. The standard grades for apples grown in this State when packed in closed packages shall be as follows:

First: "Wisconsin Standard Fancy" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, uniform in size, of good color for the variety, and which are free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing. "Uniform in Size" shall be construed to mean that apples contained in any one package shall not vary in size more than one-half inch in diameter.

Second: "Wisconsin Standard A" shall consist of hand-picked properly packed apples of one variety, which are well grown specimens, normal in shape, of not less than fifty per centum of good color for the variety, and which are practically free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing.

Third: "Wisconsin Standard B" shall consist of hand-picked properly packed apples of one variety, which are well grown, and practically free from insect injury and fungous disease; provided that apples having healed over insect punctures, small scab or blotch infections, fruit spots, or other defects which, taken singly or collectively, do not materially deform or discolor the fruit or injure its keeping quality, shall be admitted to this grade.

Fourth: "Wisconsin Unclassified" shall consist of apples which do not conform to the foregoing specifications of grade, or which though conforming are not branded in accordance therewith; provided, that if more than 10 per centum of the apples are badly deformed or badly discolored by scab, blotch, insect injury or other defects, the package containing them shall be marked "Culls" in addition to the other marks or brands required by this Act.

Sec. 2. In the interpretation of this Act a tolerance of 5 per centum below the standard shall be allowed in the Standard Fancy grade, 10 per centum in the Standard A grade, and 15 per centum in the Standard B grade; provided that not more than half the foregoing tolerance values shall be allowed on any single grade specification or defect. Such tolerance shall apply to size, color, and other grade specifications and shall be computed by counting or weighing the specimens which are judged to be below the standard for the grade in any respect, and those which are found to be smaller than the minimum size marked on the package. cified in this Act, the apples included in the face or shown sur- package.

Sec. 3. In all of the grades spe- face shall fairly represent the size and quality of the apples in the

Sec. 4. Every closed package containing apples grown in the State of Wisconsin which is sold, offered or exposed for sale, packed for sale, or shipped for sale, shall bear upon the outside of one end in plain letters or figures, or both, the name and address of the person by whose authority the apples were packed, the true name of the variety, the grade of the apples therein contained when packed or repacked, and the minimum size or the numerical count of the fruit in the package, provided that apples packed in boxes may be branded Extra Fancy in lieu of Standard Fancy; Fancy in lieu of Standard A; "C" in lieu of Standard B. If the true name of the variety is not known to the packer or the person by whose authority the apples are packed or branded, then such variety shall be designated as "unknown". Every package of apples which is repacked shall bear the name and address of the person

(*Continued on Page 100*)

CRANBERRY NOTES

There will be no "Cranberry notes" this month, nor ever again any notes by "J. W. Fitch, Sec." For nearly two years newsy, practical notes from the cranberry district of Wisconsin were received at this office regularly.

A very small percentage of our members grow cranberries or know anything of cranberry culture but a surprising number of members have read the cranberry page from month to month. Just as the editor was preparing to turn in copy for the March number the following letter was received.

"Fire destroyed the home of J. W. Fitch and his invalid father W. H. Fitch at Cranmoor on Saturday night. Both of these parties have been Secretaries of the Wisconsin State Cranberry Growers Association for the past 25 years, and I believe you are acquainted with both. The exertion in trying to extinguish the fire and also rescuing the household goods kept Mr. J. W. Fitch and his housekeeper, Miss Pearl Sawin exposed to the smoke, and also the gas from the chemical fire extinguisher to such an extent that Miss Sawin died about three or four hours later and Mr. J. W. Fitch died about twenty hours later.

W. H. Fitch, the invalid, died about twelve hours after the fire, but evidently from excitement caused by his being moved about as he was very feeble.

The bodies of the two Mr. Fitch's will be shipped to Madison Tuesday afternoon and will be buried at the Madison cemetery Wednesday forenoon. There will, however, be no services at Madison.

O. G. Malde.

Mr. J. W. Fitch was an extremely likeable man, quiet but earnest in all his efforts and unselfish to a fault. The cranberry growers will now realize for the first time how much was done for them by Mr. Fitch. It is no insignificant task to provide copy for a full page, even so small a page as this one, every month of the year, and yet that is merely one of the things J. W. Fitch did for the cranberry growers, and like his work as secretary, done without pay or any expectation of reward.

F. C.

AN ACT TO FIX STANDARDS FOR APPLES WHEN PACKED IN CLOSED PACKAGES, AND FOR OTHER PURPOSES.

(*Continued from Page 99*)

by whose authority it is repacked. The letters and figures used in marking or branding closed packages of apples under the provisions of this Act shall be of a size not less than twenty-four point Gothic.

Sec. 5. The marks and brands prescribed in this Act may be accompanied by any additional marks or brands which are not inconsistent with or do not in any way obscure the marks and brands required by this Act. Apples packed and branded in accordance with the United States Apple Grading Law approved August third, nineteen hundred and twelve, shall be exempt from the provisions of this Act.

Sec. 6. The minimum size of the fruit in all grades, shall be determined by taking the transverse diameter of the smallest fruit in the packages. Minimum sizes shall be stated in variations of one-half of an inch, as two inches, two and one-half inches, three inches, three and one-half inches, and so on, in accordance with the facts. Minimum sizes may be designated by either figures or words and the word "minimum" may be designated by the use of the abbreviation "min."

Sec. 7. It shall be unlawful for any person to pack for sale, ship for sale, offer or consign for sale, or sell, in closed packages, any apples grown in this State which are not graded, packed and marked or branded in accordance with the provisions of this Act and the regulations made hereunder, or closed packages of apples bearing any false statement, design, or device regarding such apples within the meaning of this Act.

Sec. 8. Any person who violates any of the provisions of this Act, or of the regulations promulgated hereunder, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine of not more than fifty dollars for the first offense and not more than one hundred dollars for each subsequent offense; provided, that no person shall be prosecuted under this Act who can establish by satisfactory evidence that no part of the packing or branding of the apples concerned was done by him or under his authority and that he had no knowledge that they were not packed and branded in accordance with said provisions and said regulations.

Sec. 9. The provisions of this act shall not apply to apples in closed packages which are held, stored or shipped to storage within the state, until the same are packed for sale, offered or consigned for sale, or shipped for sale.

Sec. 10. The word "person" as used herein shall be construed to include individuals, corporations,

partnerships and associations. The act, omission or failure of any official or employee of any person, when such official or employee is acting within the scope of his employment or office, shall, in every case, be deemed also the act, omission or failure of the person, as well as of the official or employee. The words "closed package" shall mean a box, barrel or other package, the contents of which cannot be easily inspected when such package is closed.

Sec. 11. The enforcement of this act shall be vested in the Dairy and Food Commission and its officers, employees and agents are authorized to enter upon the premises of any person within this state for the purposes of inspecting packages of apples and securing evidence of violation of this act, and the said Dairy and Food Commission, is hereby authorized and empowered to make, promulgate, and enforce such regulations as may be necessary for interpreting the grade specifications prescribed in this act, and for otherwise enforcing its provisions; provided, however, that any grades or classes of apples packed in closed packages, or any requirements for marking closed packages containing apples, mandatory as applying to interstate commerce which may hereafter be established by the authority of the Congress of the United States shall forthwith, as far as applicable, be established and promulgated by the Dairy and Food Commission, as the official grades, classes and marks for apples packed in closed packages in the state of Wisconsin.

The bill introduced is substantially as above, although it may vary in slight particulars.

Delegates Present at Conference to Consider Proposed Legislation Regarding Grading and Packing of Apples, Planters Hotel, St. Louis, Mo., Jan 25–26, 1917.

Hon. H. N. Dunlap, Savoy, Ill., Pres. National Apple Growers. Ill. State Hort. Society.

J. W. Stanton, Richview, Ill.,

W. S. Perrine, Centralia, Ill.

W. M. Scott, Washington, D. C., Bureau of Markets, U. S. Dept. of Agri.

E. H. Favor, St. Joseph, Mo., Editor, The Fruit Grower, Mo. State Hort. Society.

Fred. Cranefield, Madison, Wis., Sec. Wis. Hort. Society.

R. A. Simpson, Vincennes, Ind.

W. C. Reed, Vincennes, Ind.

Hon. B. F. Stuart, Rushville, Mo., Mo. State Hort. Society.

H. C. Irish, St. Louis, Mo., Sec. National Apple Gro.

Prof. W. H. Lawrence, Columbia, Mo., Mo. College of Agri.

F. A. Weber, St. Louis, Mo.

J. T. Stinson, St Louis, Mo.

W. L. English, A. P. Boles,

C. B. Michelson, W. W. Wooden, Dept. of Development, Frisco Lines.

Is this your school? If it is, please take interest enough in your children, or other people's children, to remedy some of the existing disgraceful conditions which are obvious. If it is not your school perhaps yours is as bad. Better investigate.

Laurenz Greene, Ames, Ia., Asst. Chf. Pom., Ia. Agri. College, Ia. State Hort. Society.

B. T. Stilwell, Kansas City, Mo., Kansas City Packer.

W. F. D. Batjar, Rogers, Ark., Rogers F. G. Ass'n, Ozark F. G. Ass'n, Ark. State Hort. Society.

D. E. Eicher, Springdale, Ark., Ozark F. G. Ass'n, Springdale Hort. Society.

U. T. Cox, Proctorville, Ohio, Ohio State Hort. Society.

O. F. Whitney, Topeka, Kas., Kas. State Hort. Society.

Do not put too much dependence in the novelties offered by seedsmen. Many of them are excellent. Some are no better than the common grade. Better stick to an established strain of seed until the new one has shown its superiority.

When ordering seed for the garden try some vegetables you have not used before. Salsify, swiss chard, and endive are good sorts to try.

Some Things Wisconsin Horticulture Needs.

By Professor J. G. Moore

(At Annual Convention)

The first thing Wisconsin horticulture needs is better fruit. We have been saying for some little time that Wisconsin can produce good fruit. At every convention, we hear it said, "Wisconsin can produce good fruit." Do you suppose that if you were to ask the people who have been buying Wisconsin apples on the Madison market that they would agree with that statement? They would not, at least if they had been buying the kind of Wisconsin apples that I have seen on the market, for by no means could such apples be classified as good fruit. Yet our people thoroughly believe that Wisconsin can produce good fruit and I thoroughly believe it, and because we produce so much poor fruit, I say the first thing Wisconsin horticulture needs is better fruit than the majority of Wisconsin fruit produced at the present time.

We have heard a great deal about marketing fruit. I will agree that marketing is a big problem, a very important problem, probably the most important problem of fruit growing. At least many people are inclined to say that the marketing problem is the greatest problem we have in horticulture today. We are criticised more or less for spending our time in talking about how to produce a crop. Certain people tell us, "You have told us how to produce crops for years and you have not said a thing on marketing. Now it is time to quit talking about how to produce and tell us how to market." But I want to call your attention to one fact, namely, that the first factor in marketing is to have something to market. If you expect to market successfully any commodity, you have to have a commodity which the market wants and I do not care how many organizations you have, how fine your system of marketing is, if you do not have the commodity desired, you will not have a market, at least you will not have one very long. I have said that the first thing that Wisconsin horticulture needs is better fruit. I do not mean to insinuate that there is no good fruit produced in Wisconsin. There are a number of men in Wisconsin who are not producing good fruit, and who are attempting to market that kind of fruit.

The second thing which I think Wisconsin horticulture needs is more honesty. I have come to that point in my teaching, and I am coming to it more and more when I appear before the public, of saying things straight from the shoulder, of saying what I think, and it is because I believe it that I say we need more honesty in Wisconsin horticulture. Of course, that does not apply to any one here. It is the fellow that is at home who should be more honest, for generally speaking, the man who has a sufficient interest in horticulture to attend conventions, has enough interest to be honest, at least, reasonably honest. Possibly I am not using the right term, perhaps I should say he should use better judgment and more discrimination. That would be a little more pleasant, but I have not been able to bring myself to use any other term for that method which we see in practice so much of putting good apples on the top of the barrels and putting culls in the center, except the word "dishonesty."

Now, why do we need more honesty? We need honesty first because in the marketing of fruit, a great many people put the best on top. I am not criticising putting the good fruit on top, at least put as good on top as you put in the center. What I am criticising is filling in the center with culls. I do not need to tell any of you who have watched the markets that this is done, and that it is done by men who are growing fruit in Wisconsin. We know it is being done in Michigan, I have heard other people say so. I have heard it said in our conventions about New York growers, but I have not heard it said there about Wisconsin growers. Wisconsin growers are doing it, however, not the best growers, but there are too many growers doing it. Therefore we need more honesty.

Now, you say, what is the use of talking to us about these things. What is the use of preaching to people who are not practicing certain things, telling them this or that is the thing to do? You know it is very often said that the trouble with the churches today is that the preaching is done to the folks that do not need it. The folks that do need it stay at home. I am talking to people who do not need it. The people who need it are not here. But I am going to try to convince you that I am justified in saying it to you. How are we to secure these two things, better fruit and greater honesty in marketing?

The first means of which I think of accomplishing this result is by education. Education, but how are we to educate? I will say first that at least a part of the education should fall upon two organizations. It should fall upon the State Horticultural Society and it should fall upon the Department of Horticulture of the University. That gets both Cranefield and myself. Education is the purpose of

those organizations and most certainly education along these two lines, better fruit and more honesty in fruit marketing. We have been at the job in a more or less enthusiastic manner. We possibly have accomplished something, at least, I hope we have, for we have tried to, but I want to tell you that we will never have a very appreciable increase in better fruit in Wisconsin, or a very great increase in honesty with which it is put upon the market, if we leave all this education to the State Horticultural Society and the Department of Horticulture of the University. Why? Because it is a physical impossibility for those two organizations, manned as they are, to reach enough people. We can do something, but we cannot do it all. We will have to depend then on some other means of education if we are to accomplish this result.

The second means that I think of helping accomplish this result is our fruit growers' associations. Those that we have are doing much to educate the people of their communities as to how to produce better fruit and how to pack honestly, and how to put the right kind of commodity upon the market in an honest manner. We hear very little complaint about fruit that comes from these sections of the state where we have local co-operative associations. But in Wisconsin, where probably three-fourths or more of the fruit that reaches the local markets and to some extent the wholesale markets, is produced in communities where there is not enough commercial orchardists for an organization, even if all these organizations are at the job educating the people as regards these things, we will not even then succeed if we stop at that point.

I confess that I believe that the greatest force in educating men who are selling fruit in Wisconsin from commercial orchards and from home orchards, at any rate the semi-commercial orchard, is the individual fruit growers, because the individual fruit growers can come in contact with the greatest number of people. They can come in contact with them in a way in which the officials of the state departments, or even the officials of co-operative associations cannot, and I believe to a very great extent that whether we make improvement or not in these matters depends upon individual education by example. We are trying to teach this in our work in the demonstration orchards and I believe people learn more quickly by example than in any other way.

Did you ever stop to think that a great deal of the produce we market is marketed upon a wrong hypothesis. Did you ever stop to question a man's reason for attempting to sell all the wormy, scabby and gnarly fruit which he produces along with the good fruit? I dare say you have and you have arrived at this conclusion, namely, the man does it because he wants to get the greatest possible returns from the crop he produces. Well, let us consider it one step farther. Is the man who practices the marketing of poor fruit, or the man who practices putting culls in the center of the barrel, really working upon the right hypothesis to accomplish the result which he wants to accomplish, namely, getting dollars and cents? I believe if we follow such a practice to its conclusion, we will find that he is doing just exactly the opposite. He is practicing a method which will reduce in the end the amount which he would obtain, because first of all, those organizations and most cer- commodity. Any man who is producing good fruit is obliged to market at the present time in competition with the kind of fruit we have been having on the Madison market, and you will find that the buyer is constantly pushing the price down. He is buying something he calls apples and as buyers have not differentiated between cull stock and good stock to the extent that they should, he buys at the lowest possible price in order that he may make something on the deal after sustaining the losses which necessarily occur in handling an inferior grade of fruit. The result is that the lower price paid for a poor grade has a depressing effect even on the good grade. A poor commodity tends to lessen demand and thus the man who puts such fruit on the market lessens his chance of disposing of the crop and establishes a lower price for his commodity.

The condition we have just cited may be more or less temporary, but the injury the grower is doing himself does not stop here. He is doing himself a permanent injury by ruining his reputation for the production of a good grade of that commodity. Why do you patronize a certain tailor, or a certain concern that manufactures a given product? Why do you buy a certain brand of goods? Because the manufacturer, or the man from whom you purchase it has established a reputation for his commodity. We buy most commodities very largely on reputation. Fruit, however, we buy largely on lack of reputation, because there has been no reputation established. So, a man, I care not whether he is going to market individually or co-operatively, must establish a reputation for good products if he ex-

(Continued on Page 108)

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Without Money and Without Price.

"I am especially anxious to receive a report of the Horticultural Society containing a list of fruits recommended for Wisconsin. I have been fleeced by tree agents too often. If you will write me the price of this book I will cheerfully remit."

* * *

This party, who was not at the time of writing a member, somehow discovered this great and unfailing fount of information and received a copy of the Planter's Guide, a pamphlet but recently issued, giving lists of fruits recommended for culture in Wisconsin with a few kinds marked as adapted to his particular section of the state; also a copy of Wisconsin Horticulture containing advertisements of reliable nurserymen, those who sell by catalog and those who sell thru agents. This with the added advice to go slow on novelties and highly advertised new varieties is all that any one can do for him or for any one else. If with this information he is "fleeced by the tree agents" it's his own fault.

Of the Making of Books There is No End.

A member asks for a list of books "treating of horticulture and suitable for Wisconsin." The writer has books on horticulture which cost over five hundred dollars in addition to as many more on allied subjects. Of these about a dozen have been *studied*, a dozen more read often and one-half of the remainder used occasionally for reference. The remaining portion, comprising at least one hundred volumes, are never opened, worthless for any purpose whatever except junk. There are altogether too many poor books on horticulture and all too few good ones.

The first great horticultural book to appear in the last half century was Peter Henderson's Gardening for Profit, for Henderson was the first of 19th century writers on horticulture to teach *principles*. Following Henderson with a big gap between came Bailey, who fortunately is still at work, and he too taught principles. Henderson's Gardening for Profit and his Gardening for Pleasure are worth reading.

Baileys Principles of Fruit Growing and Principles of Vegetable Gardening are classics in horticulture. To these add The Principles of Plant Culture by Goff and Art Out of Doors by Mrs. Schuyler Van Rensselear and you have the nucleus and the essential part of a library on horticulture. Around these may be built groups of books on special subjects. The Apple, Wilkinson; Productive Gardening, Sears; Vegetable Gardening, Greene; a manual of garden practice, and dozens of others, but the heart of the whole should be books on *principles*, for the foundations must be well laid. Principles of plant growth and nurture are the same in Wisconsin as in California and are for all time. Cultural directions vary from year to year, almost from day to day.

A Specific Example.

It is now universally acknowledged that a fool and his money are soon parted. Not so the farmer and his orchard; it is with him spring, summer and fall. Does he take care of it? He does not. A prosperous farmer of central Wisconsin writes:

I have an orchard of 8 acres, and a neighbor has one of 3½ acres, all fair commercial varieties. The trees are just right age for good bearing but are not doing anything at all practically for need of proper spraying and care.

We are both busy farmers and have no time to do the work ourselves even if we knew how. I have been thinking that perhaps we could lease the orchards to some individual or company.

Can you put me on track of some such individual or company?

S. W.

There is a chance here for somebody to get into the apple business without investing much money. The owners of these or-

chards should be content with an annual cash rental of somewhere between five and ten dollars an acre and fruit enough for family use, or a certain specified amount.

Some college graduate in horticulture ought to tackle this proposition just to show that he has grit. And, yet, notwithstanding, this letter was first addressed to the college and referred to the editor.

Apples Baked.

In the February number the editor dropped into an odd corner a little appeal to readers to call for baked apples at restaurants and hotels rather than grape fruit.

Soon a letter came from a member as follows:

Dear Sir:—

After reading—Call for a baked apple at the hotels and restaurants, in place of grape fruit—I would like to ask if any of the readers can tell us how to bake apples and turn them out as well as Thompson's and some of the other restaurants do.

When we have baked apples at home they shrivel up and are not in it with Thompson's (Chicago).

Yours truly,

C. M. H.

This was a challenge that could not go unheeded and a copy of the letter was sent to four ladies known to be experts in cooking apples in any form, including the "Cranberry Lady" of Cranmoor, for it was assumed that anyone who could prepare cranberries so divinely as does Mrs. Whittlesey could also bake apples better than "Thompson."

Thompson, be it said for the benefit of any who do not often visit the big smudge at the south end of Lake Michigan, conducts high class restaurants in Chicago, very many of them, at least two dozen, possibly two hundred, and serves delicious baked apples practically every day in the year. Mrs. Rasmussen is dead right on one point, Thompson uses Wisconsin apples! In September, 1915, he spent thousands of dollars advertising Wisconsin baked apples. Large display ads., one-third to one-half page each in all the Chicago dailies called attention to "Baked Apples, Wisconsin Wolf River," etc.

The four recipes follow and others are solicited.

BY THE "CRANBERRY LADY."

I am sorry I cannot take up the apple gauntlet you have thrown down. I preach the gospel of cranberries—the apple is not my province. I do not know how to bake a tart apple tender enough to blend nicely with sugar and cream—the way we like them, without the inside shrinking more or less from the skin. This I do know. If apples are pricked in a number of places with a fork, and at least half an inch of hot water is poured into well filled but not crowded baking dish—they will not readily burst open, and never "shrivel." Any water that remains—and some is desirable,—should be poured over the baked apples, which they will absorb if left to get cold, and which tends to plump them.

Mrs. S. N. Wittlesey.

USE WISCONSIN APPLES.

In reply to your letter of the 7th regarding baked apples, I will say that undoubtedly Thompsons (Chicago) use Wisconsin grown apples.

Many of our Wisconsin people contend that the eastern and western apples excel our own in quality; merely perhaps on account of the higher prices asked.

If you want a baked apple that not only equals Thompsons but has also that "Home Sweet Home" flavor use Wisconsin Greenings (Northwestern Greenings) or Wolf Rivers. Talmans are good but we prefer a tart apple which requires some sugar. Core the apples, place in a granite pan, fill the cavities with sugar and add water to the depth of about three-eighths of an inch, bake in a very moderate over until tender.—Mrs. N. A. Rasmussen.

TO BAKE APPLES WITH QUALITY.

To have a good baked apple select one of good quality before it is baked. Baking a poor quality apple won't put quality into it.

The apple can be peeled or not as one chooses. If not to be peeled then select an apple with a thin skin as baking will make a thick tough skin leathery.

Select 10 even sized apples, take out the blossom leaving a slight cavity. Fill this with a small piece of butter and place the apples in a deep cake pan or tin. Sprinkle with a cup full of sugar and pour hot water into the pan to the depth of three-fourths of an inch.

Bake very slowly. Slow baking is the secret of keeping the shape. Sugar will help to keep the shape of fruit if put on while cooking. It will also require more sugar.

Such apples as the Talman Sweet, and Newell's Winter are improved by boiling instead of baking.

For the Talman drop into clear boiling water and boil till nearly done, then put in the sugar and

(*Continued on p. 106, col. 3*)

A Village Fair.

(*Continued from Page 98*)

we sent out lists of flowers and vegetables that were to be entered in competitions, but we did not get them out early enough and they were crude and indefinite. The whole list of all departments should have been sent, and the "classes" more clearly defined. In some, at least "named varieties" should have been called for. I think we ought to accustom ourselves to labeling carefully. It really seems to me that it is only showing a proper respect to our flowers and vegetables to address them by their proper names. Aside from a sentimental consideration, this care would lead to a better knowledge and discrimination in selecting varieties best suited to ones own conditions. Think of the way we tuck our dahlias and gladiolii, and other bulbs, away, until the poor things lose their identity and dignity, and our rudeness to our roses, those queenly souls. How seldom can we properly introduce them! They might respond to a more sympathetic and polite treatment.

Our plans were very faulty and showed our inexperience, but we did interest the people and we did have a fair, and next year we shall have a better one. One man, who had never had a garden, went home and dug up his whole back yard. Everyone you meet tells you what he is going to do next ear, and the people who had "just as fine" at home, will all exhibit next year. One very wise decision we made in the beginning, was to have ribbons as the only prizes. They proved all the incentive that was required. We were fortunate in being able to hold the fair in our beautiful new school house. On the main floor, in the corridor, were the vegetables and flowers, and the display of the former was very creditable. One could not suppress an exclamation of surprise that one's neighbors could grow such mammoth and such perfect tomatoes and beans, and that the children could bring such fine specimens. The flowers were handicapped by the hot, dry season and the Dahlias and Gladiolii, upon which we had counted, were very scarce. The Roses, Asters, Marigolds, Nasturtiums, were an agreeable surprise. There was a dear little bunch of sweet grass, which some day will be made into a basket for next year's Fair. The "arrangements of flowers" (a class by itself), were interesting. Grouped by themselves, were a few fine exhibits of professional gardening. Among them, that of Mr. Livingstone, whom you all know, and whom we are glad to number among our neighbors, and to whose kindness in judging we are much indebted. In one of the large rooms, the Arts and Crafts Exhibit was full and varied, ranging from wood carving, metal work, basketry, beautiful needle work, to cleverly designed children's clothes. It is always a surprise and delight to find how much genius there is in a community. The Domestic Science Department, with its cake and bread and candy, and its canned fruits and vegetables, afforded an opportunity for discovering another set of interests. One energetic woman exhibited seventeen jars of vegetables, all from her own garden. One cake showed wonderful modeling and coloring of flowers for decoration. There was honey from East Milwaukee bees. Who ever suspected that one's flowers were contributing to this nectar? The children's work, with all sorts of surprises, and the Architectural Exhibit—we discovered five architects within our borders—occupied the third floor.

"Made in East Milwaukee" was the absolute rule for exhibition, and one butcher used the opportunity to display real art in his work. Each turn was a surprise that one small town could carry all they knew!

In the basement were the "fun-makers", and a few "fakirs", that seem to belong to a Village Fair. The young and old danced to their heart's content, in a room decorated with cornstalks. "Farmers" wandered about, causing much amusement, and the unwary fell a prey to "policemen". Refreshments were served in the Domestic Science room, and were a means to friendliness.

We may say, with confidence, that the Fair was a success, so far as the actual results were concerned, but greatest assets are the intangible ones. All during the Summer we leaned over our neighbor's fence, learning how he grew his tomatoes, and with it, a new knowledge of him and the possibility of working together for those things which shall make our community the healthiest, happiest place for us and our children, and that it may be a power in the larger community of our state and nation.

TO BAKE APPLES WITH QUALITY.

(*Continued from Page 105*)

let cook very slowly till a rich brown.

The Newell's can be peeled and dropped into a hot syrup, cover and boil slowly until tender. The amount of sugar used may suit one's taste. The syrup should nearly cover the apples.

M. G. B.

BAKED APPLES WITHOUT WRINKLES.

The chief reason that the baked apples of large restaurants are not wrinkled is that so many apples

are baked at one time that the oven is filled with moisture.

In baking a few apples, shallow pans of water should be placed in the bottom of the oven and the apples baked on the rack above.

Select only firm apples of a variety that does not go to pieces easily such as N. W. Greenings, Imperial, Northern Spy, etc.

Prick the skin many times around the middle with a fork; remove the core, place in baking dish, fill cavities with sugar with a piece of butter on top, put about three-fourths inch water around apples.

Bake in moderate oven, basting frequently until apples are tender when pierced with fork in center.

Mrs. H. H. Morgan.

Treat Cabbage Seed.

R. E. Vaughan.

Treat cabbage seed for black rot and black leg diseases. These troubles do a large amount of damage to gardeners and truck growers in Wisconsin, but fortunately can be held in check by seed treatment. Seed treatment or disinfection for grain smut and potato scab is a common practice on many Wisconsin farms and is known to give big returns on the amount of money invested and time spent. The disinfection of cabbage seed is equally important. It must be remembered, however, that seed disinfection cannot eliminate the diseases which come to the plants from the soil, neighboring fields, being carried by farm machinery, tramping feet and insects. Formaldehyde or formalin is the best disinfectant to use in treating cabbage seed.

Take 1 ounce of the strong (40%) solution and mix in 2 gallons of water in any ordinary tub or pail. Then take the seed to be treated and put it loosely in a cloth sack which should be tied up and placed in the diluted solution of formalin for 20 minutes. The seed should be stirred around in the solution so as to make sure that all the seeds are entirely wet.

When the 20 minutes are over rinse the seed in clear water to remove the formaldehyde and dry at once by spreading on clean papers, canvas, on floor. After drying the seed is already to be put in the seeder or when thoroughly dry can be stored for future use.

Some Cautions

1. Don't freeze the wet seed.
2. Don't return the treated seed to the original packages, because of danger of re-infection.
3. Don't leave the seed in the solution more than 20 minutes.
4. Don't make the solution too strong.

Over-treatment injures the vitality of the seed.

Department of Plant Pathology, University of Wisconsin, Madison, Wis.

The Progressive is said to be the best shipper among the autumn-bearing strawberries.

STRAWBERRY PLANTS

100,000 choice Strawberry Plants. Also Red and Black Raspberry. Asparagus and Rhubarb Roots.

These plants will not be dug more than twenty-four hours before shipping. All stock guaranteed. Hot bed plants in season. Write for prices.

Rasmussen's Fruit Farm
Oshkosh, Wisconsin

JEWELL MINNESOTA GROWN
Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
For Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year
Kellogg's Nurseries
Box 77, Janesville, Wis.

Wisconsin Horticulture.

(*Continued from Page 103*)

pects to get the greatest returns in the end from his endeavors along any line of production. The trouble is we get to looking so close to the end of our noses in these things that we forget to see what lies beyond. We seem to think that because we are getting money now by selling a lot of cull fruit, that we are making a good deal and we forget that we are going to lose a great deal more a little later on because we have sold cull fruit, and destroyed our reputation as a producer of the kind of fruit the consumer wants. It is a penny wise and pound foolish way of doing things and we cannot afford to do it as fruit growers and we must educate the man who is doing it so that he too will recognize that it is the wrong policy.

When I said greater honesty was one of the needs of Wisconsin fruit growing, I did not mean to intimate that the grower who sells you fruit would cheat you on measure or "short change" you. He would clearly recognize that such things were dishonest, but mixing in a few worthless apples when you are supposed to be getting good ones is simply a "trick of the trade" and not dishonest to his way of thinking. If he is dishonest then, it is because he has not developed the right standard upon which to operate. But ignorance of the law does not excuse anyone and because he has not developed the right standard by which to judge his act when he does that sort of thing, he needs education so as to form right standards. He should learn that he is operating on the wrong standard both from the standpoint of what other folks regard as the proper attitude in the matter, and also in regard to the best methods of gaining the greatest remuneration from his productive efforts. He should be shown that at all times that he is the loser and not the gainer by such practices.

So it behooves us all, organizations and individuals, to do all in our power to educate the growers of fruit in Wisconsin, (those who are commercial growers, if they need education; and those who are not commercial growers, who mostly need education if they are to produce fruit) to the higher and in the end more profitable standards of fruit production and marketing.

We cannot, however, stop with education if we are to attain these objects. There are some people who refuse to be educated. You have all seen men who after a given point had been conclusively proved would say, "Well, I don't believe it anyway." It reminds me of the old saying, "A man convinced against his will is of the same opinion still." Yes, there are certain people who will not be educated. What are we going to do with that sort of people as regards better fruit and greater honesty? We are going to do with that sort of people just like we do with that sort of people in every other phase of life. We will compel them to be good whether they want to or not. We will compel them by legislation, as far as possible, to meet these standards. I will not attempt to tell what laws we shall have, but merely throw out a few suggestions. We will legislate first, I believe, in such a way as to discriminate against the producer of poor fruit. That may be unconstitutional, you know, but that is what we are going to do. How are we to do it? We will discriminate against the producer of poor fruit by passing legislation which will compel a man to pack according to certain standards and to pack honestly within those standards. This is not a new thing. It has been done, in fact is being done, all the time.

We have two types of legislation along the line of discrimination against the man who produces poor fruit, which are being tried out. We have a national law, as you all know, which is called the Sulzer Bill, which says that a man, if he is going to sell certain commodities and label them in a certain way, must maintain a certain standard. This is an optional law regulating standards and may be a very good thing. It does not amount to a picayune, however, when it comes to this man who refused to be educated. The only way you can get that fellow is to say to him, "When you sell this commodity, you will pack it according to certain standards, and you will mark on the package the standard of the lowest grade you have in the package. If you want to pack good apples at the end of your barrel and fill the center with culls, all right, but when you label that barrel, you shall say that this is a barrel of *culls*, because it has culls in it." We need, then, not so much an optional grading and labelling law, as we need a compulsory grading and labelling law.

We have this type of law in operation. New York has a law of this type. I have heard it said that it is not working out satisfactorily. I am not here to controvert that statement, because I have not investigated, but I can point you to a case of a similar law that I know is working and has been working for fifteen or twenty years. It is the Ontario Compulsory Grading and Labelling Law. We should not condemn too soon the New York law, because it may not be working up to the highest standard, because they have not had

time there to put it in operation, that is, to work it out to its fullest efficiency and then too, we must consider that this law in New York is helping to educate the man who does not want to be educated along this line.

The second type of legislation which I have in mind is to compel delinquents to use proper methods in producing their commodities or else get out of the business. Now, I know that it will be immediately said, "Why, that is radical. To think that we should say to a farmer, 'You will either have to take care of this orchard, or you will have to get rid of it.' That is radical." It is not radical at all. We think that it is radical because we have set a different standard for fruit growing than for other farming. We, the fruit growers, have allowed the people to set a different standard as regards our business than as regards other business. You all know that we have a law that says to a man in a community, "You shall not keep a sheep dog on your farm to destroy the sheep of your neighbors." We have a law more or less effective, on our statute books that says to a man, "You shall not, on your farm, allow noxious weeds to develop and infest the community." But you say to the farm orchardist, "You go on, you can grow just as many apple scab spores and just as many codling moth and just as many curculio to curse your neighbour as you want to and we will not say a word about it."

I do not know, in fact I doubt if we are at the present time in a place where it would be wise to enact such legislation in Wisconsin, although they have it in some states. I want to bring this fact to your attention, however, that even in fruit growing in Wisconsin we are saying that very thing, only in a very restricted way. We have on the statute books of Wisconsin today a law, and it is in effect in all the states which grow fruit, which gives the state authorities the right to go to a man who has his trees infested with a certain insect pest, the San Jose scale, and say to him, "You take care of that tree or we will take care of it for you." You see it is not so big an innovation as you thought. Codling moth in its relation to fruit growing is not so very different from San Jose scale. We are coming to the point where in self defense we are looking at it in that light. They have come to it in certain western states. The state of Montana has come to it as regards the fire blight situation and they are saying that orchardists cannot maintain a popular nuisance as regards the fruit industry by maintaining trees which are badly infested with fire blight. We of Wisconsin, as our fruit industry develops, if it is to develop, will come sooner or later to that same basis of operation, or else it will be a sorry day for the man who attempts to produce fruit commercially in this state.

I had an ex-student come into my office the other day to talk about the advisability of planting an orchard in a certain section in the state. He presented this situation:—"Here is my proposition. Is it worth while for me to plant an orchard and compete with the kind of stuff that is put upon my market when the buyer does not seem to discriminate between poor and good fruit?" What is the use of better fruit if we do not have a better market? What shall we do about marketing? It is evident that one of the needs of Wisconsin fruit growing is better marketing methods. The day of individual marketing is largely past, except where a man is a very large grower, or where he is marketing locally. In order to obviate that difficulty in certain sections, we have co-operative fruit growers' associations like those at Sturgeon Bay and Bayfield, a group of fruit growers who handle their fruit more or less as a unit. It is a fine thing and absolutely necessary. It is quite easy to organize such associations in communities where fruit growing has become an important commercial industry, but we have some other communities that are nearly as important, if not as important from the standpoint of development of horticulture in Wisconsin, as Bayfield and Sturgeon Bay. Yet, the growers in some of those sections do not happen to be numerous enough to make possible a co-operative organization. Neither do they grow sufficient fruit to make it possible for them to handle their commodity most advantageously as individuals.

In this improvement of our marketing conditions, we need some sort of an organization, possibly not an organization in the sense in which we usually use the term, but we need some method by which we can have what we might practically term a fruit clearing house. Now a fruit clearing house is not possible until we have that better fruit which I have already suggested. A fruit clearing house, if it is to be operated, necessitates that these growers who are scattered, who cannot co-operate successfully, produce such fruit and so pack it that those in charge of the clearing house know that when they recommend a grower or a community, that the buyer is going to be able to get in that locality the kind of commodity the clear-

(Continued on Page 112)

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

HARDY PERENNIALS AND PANSIES

Grown for

Nurserymen Florists
Landscape Planters Gardeners

Send us your want list for prices. Questions gladly answered.

WILLIAM TOOLE & SON

(Garry-nee-Dule) BARABOO, WIS.

According to experiments carried on at the North Dakota experiment station, so-called pedigree strawberries and trees are no better than good, well selected common stock. Don't pay high prices for pedigreed nursery stock.

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WISCONSIN' FAVORED FRUIT DISTRICT

Our Specialty: Planting and developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

THE KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

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CREAM CITY CHEMICAL WORKS

774-778 Kinnickinnic Ave. MILWAUKEE, WIS.

WRITE FOR CIRCULARS AND INFORMATION

Wisconsin Horticulture.

(Continued from Page 109)

ing house says he can get. Here is a place where the proposition of reputation comes in. Very frequently we get letters from buyers located in various sections of the country, which read about as follows: "Can you put us in touch with a locality in your state where we can get certain quantities, (stating the quantities), of desirable fruit?" These quantities are usually so large that we are unable to write to those buyers and say, "You go to such a point and you can get it." We may know of two or three men possibly in a section who are producing the right kind of fruit, but not enough to make a good shipment. Both Cranefield and myself are trying to maintain the reputation of the fruit produced in the state and we do not like to say to a buyer outside of the state, "You go to this section and you can get this fruit," and then have him get there and find that he cannot get it or have him order shipments from that section and when he gets them, find the fruit not up to grade and dishonestly packed. We must have then a considerable body of men in the state who can be absolutely depended upon to produce good fruit and pack it honestly, if we hope to establish a clearing house.

The clearing house is simply to gather and distribute information regarding the market to those growers who cannot afford, because of their relatively small acreages, to gather the information for themselves.

Why this clearing house? Let me illustrate. I have a ten acre orchard. I cannot afford, financially, to get in touch with the various markets and find out where to place my fruit to the best advantage. If I can co-operate, however, with a large number of other growers of similar condition and have the information gathered for us, and I can avail myself of that information, then I can advantageously contribute my share to the support of the proposition.

Probably we have not reached the proper point in the development of our fruit industry to warrant such an undertaking, and it may be even possible that we will not be ready for it within the next few years. The thing I have been trying to do this morning is not to give you something which you simply listen to and then straightway forget, but rather I have been trying to outline some problems which are going to take the very best thought of every member of the Wisconsin Horticultural Society for the next two, three, five, or possibly ten years to solve correctly; problems which we are running up against and will continue to run up against, and which sooner or later, if not correctly solved, will ruin our fruit industry. Are we going to be prepared when we meet those problems? We are not going to be prepared, we are not going to be able to meet them successfully, unless we begin to plan, unless we begin to work out a solution in advance. I do not mean to even indicate that what I have said is the solution. I have only been throwing out a few suggestions in order to set you all thinking about these problems so that when the time comes to act, we will be ready.

Bulletin 766, United States Department of Agriculture, is entitled "The Common Cabbage Worm." Send to the Division of Publications, Washington, D. C., for it.

It is said that sphagnum moss in the bottom of a vase used for cut flowers will keep the water fresh for some time.

McKAY NURSERY COMPANY

PARDEEVILLE, WISCONSIN

Nursery Stock of Quality

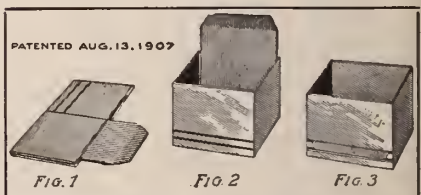
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.



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We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII Madison, Wisconsin, April, 1917 Number 8

On account of its symmetrical outline, sturdy habit of growth and dense foliage the Norway maple is an ideal tree for parks and lawns. It is also, for these reasons, an excellent tree for street planting.

Growing Chrysanthemums.

Robert Blackwood, Lake Geneva, at Annual Convention.

Chrysanthemums have been grown in this country for over one hundred years, and though each year sees them gaining in popularity, they are not receiving the interest these beautiful flowers deserve. The types are so different and the forms and colors so varied that they cannot but please even the most critical of flower lovers. The most distinct and most grown types are the large flowering, the single, the anemone and the pompon. All are of easy culture and while they are seen at their best in green houses, even the best varieties of any of these types can be grown to near exhibition quality in cold frames. Everybody cannot have a greenhouse, but every flower loving member should have some cold frames and on this method of growing I will start. Frames should be of wood 18″ high at the back and 12″ high in front and made to fit three or four sash 3′ wide and 6′ long. If 2″ x 4″ posts 3′ above ground are put in at the outside corners the frame can easily be raised at any time during the growing season by adding boards to fill up underneath. The plants that have given you satisfaction and that you intend growing another year should be cut down to the soil after flowering, taken out of the pots, some of the old soil removed and planted close together in the frame. Give them a thorough watering and make sure they are properly labeled with strong labels. Cover them over with dry leaves and put on the sash. Bank up the frame with leaves, straw or manure and cover over the sash with sacks or such like covering. If some air is given on warm days during winter that should be all that is necessary to carry them over winter nicely. In spring when danger of hard frost is past the leaves and other covering should be removed, but be careful to cover over the sash on occasional cold nights. Pretty soon the plants will show growth and then is the time to select and cut off rooted suckers and put them into small pots or plant in the frame in rows 3″ apart and 6″ between the rows, adding a little sand to the roots while planting. In four or five weeks they will have made strong roots and should be transferred to 4″ pots using a fairly rich soil composed of say five parts fibrous sod with one part well rotted cow manure added. This is best prepared the previous fall, but any good soil with some bone meal added will grow nice plants. When the roots reach the sides of the pots and before they are potbound they should be potted into their flowering pots and 6″ is a nice size. The pots can then be plunged to their rims in the frame if some stones or broken pots are put under the pots for drainage and do not overcrowd. When the plants are over 3″ high their tops should be pinched off to encourage side growths and every time the side growths are 3″ long the tops should be pinched off until the 1st of September, when they are allowed to grow. From the first of June until the middle of September the sash can be kept off entirely and after that plenty of air should be given when the temperature is over 45°. The cooler they are grown the more cold they will stand. If by chance a hard night's frost catches them uncovered, cover over the sash the first thing in the morning to keep the sun out and let them thaw out in the dark in this way and a few degrees of frost wont hurt these cool grown plants even when in full flower. Give them plenty of water at all times and syringing on sunny forenoons during the summer is beneficial. Keep off green and black fly by dusting with tobacco dust or by spraying with one of the advertised insecticides. Chrysanthemums are little troubled with diseases, but should a little mildew appear on the plants a dusting of sulphur will check it. By growing early and late varieties you can have flowering plants from the first of October until into December for your home, and for your many friends, for with a surplus of such plants you will have many friends.

Out door chrysanthemums are old time favorites and who does not remember Mother's or Grandmother's pompons. They are very hardy and after flowering a covering of branches and leaves will put them through an ordinary winter, but the better way is to lift them after flowering and carry them over winter in frames as recommended for frame growing. The roots can then be divided and planted out in spring in good soil and other than cultivating and watering in very dry weather, they will require little attention. During the growing season a mulching of well rotted stable manure will help retain the moisture and strengthen the growth. When danger of frost comes a covering of cheesecloth to keep off frost and sun will prolong their flowering season. At this time, too, a few plants put in pots will make very fine house plants.

The growing of chrysanthemums in green houses is too big a subject to do justice to in such a short paper, so I will touch on it very briefly. Cuttings are rooted in sand in a cool house from February till April, potted into 2 inch pots when, rooted next to 4″ pots and then to their flowering pots or to the bench. Large flowering varieties are grown to single stems by keeping a leader and pinching off all other growths. They are tied to stakes and often attain the height of 8′ with flowers up to 10″ in diameter. The selection of buds for exhibition blooms can only be acquired by studying the varieties individually which makes growing new varieties uncertain to even an experienced grower. To explain just what I mean. These large flowering varieties grown to single stems will, during June, form a flower bud which if selected would, as a general rule, amount to nothing but rather seems nature's way of stopping the plant to encourage side growth for at this time several side growths appear. One of these growths is selected as a leader and the others removed. In the same way a flower bud will appear early in August, perhaps two in September and the last or terminal bud late in September or early October. Now in order to produce the largest and best flowers we must know which one of these buds in the different varieties to choose. Let us take for example that fine variety, "Beatrice May." On an early August bud this produces an enormous pure white flower. On the next bud it is not so large and has a light shade of pink color, while on the terminal bud it is much smaller and is of a decided pink color. To take the wrong bud on some varieties will mean a deformed flower or a flower with an open center. There are of course many fine varieties that come good from any bud and these the beginner should grow first. As cool as possible over 45 degrees is the best temperature. Bush plants in greenhouses are pinched and grown same as in frame culture and by feeding and extra care specimen plants have been grown 16′ in diameter and carrying as many as 3,000 flowers. Although they are very easily grown, nothing will show the good results of a little extra care quicker than chrysanthemums.

For Frames; Large Flowered.

Yellow: Comoleta, Cheltoni, Golden age.

White: Early Snow, Wm. Turner, Lady Lydia.

Pink: Pacific Supreme, Well's Lake Pink, Dr. Enguhard.

Red: The Bard, Black Hawk, Harvard.

Bronze: Greystone, Brutus.

Single

Yellow: Little Barbee, Golden Mensa.

White: Anna, Mensa.

Pink: Stanley Ven, Cosmos.

Red: Ceddie Mason, Minnesota.

Bronze: Dorothy Dann.

Anemone.

Yellow: Yellow Garza, Mrs. F. Kuehne.

White: Garza, Chas. L. Hutchinson.

Pink: Ada Sweet, Miss Katherine Simmons.

Pompon.

Yellow: Zenobia, Golden Climax, Klondyke.

White: Diana, Lulu, Elva.

Pink: Lillian Doty, Minta, Fairy Queen.

Red: Black Douglas, Viola.

Bronze: Skibo, Princeton.

Yellow: Carrie, Cranfordia, Horace Martin.

White: Carpet of Snow, Well's Masse, Dorothy.

Pink: Cranford Pink, Normandie, Marie Masse.

Aster Type, for Out Doors.

Red: Goascher's Crimson, Crimson Pride, Chas. Jolly.

Bronze: A. Barham.

A Home Made Sprayer.

Mr. Christian Saabye, who lives at Detroit Harbor, which is the principal city of Washington Island, which is a part of Door Co., is a progressive fruit grower and submits the following for the benefit of the smaller grower who does not feel able to pay three hundred dollars for a power outfit.

"I see by the February number of Wisconsin Horticulture one member wants to know about a power sprayer. Now I made one myself out of a 1½ H. P. engine, a well pump jack, a good hand power spray pump and a home made tank all mounted on a low truck and it works fine. I run the jack with a belt and belt shifter. This outfit will last well for years with little expense for repairs. Here is the expense:

Engine	$25 to	$35
Tank	10 to	15
Pump	12 to	15
Jack	3 to	4
Hose, belt, etc.	5 to	6
Belt shifter	2 to	3
Total	57	78

According to the 1910 census, New York fruit products are worth nearly $25,000,000.

It will keep Wisconsin growers going some to catch up with New York. Still it can be done.

A Delightful Story About Flowers and Friends Entitled, "The West Allis Garden Club."

The West Allis Garden Club is quite young, being only ten months old. It was organized in February, 1916, by a number of enthusiastic gardeners, who for some years had exchanged plants and experiences with both pleasure and profit.

They finally decided that a more formal organization with regular meetings and more members, would be of advantage to themselves and the community. We are not burdened with officers, having only a President and Secretary. And just one strictly abided by rule for membership; no one is admitted to this club who is not willing to work in a garden.

When we asked to be admitted to the W. S. H. S. Mr. Cranefield said he hoped we had no dead ones in our club. We can proudly say there isn't one.

The club was organized for mutual help and pleasure and the desire to interest people in having a garden, especially the old fashioned garden that our grandmothers used to have, one that was permanent, the kind that edged the walks, nestled against the house, strayed off into the row of apple and plum trees, with grape vines growing on the dividing fence, where there was a strawberry bed, some currant and raspberry bushes, where lilac and mock oranges, peonies, phlox, narcissus, daffodils, and tulips, roses, tiger lilies, sweet arcadia and June pinks and countless other sweet flowers bloomed in a riot of color, from spring until fall; a delightful spot to wander round in; something good to eat nearly all the time and always beautiful. The garden one remembers as long as life lasts. That is the kind of garden we are trying to have ourselves and induce others to have.

But if they feel that is too much of an undertaking, why have some kind of a garden, even if it is only a porch or window box. Dig in the ground and learn what a wonderful thing it is to watch things grow.

We are especially interested in the growing of perennials, for

Hepatica tribola: plentiful in Wisconsin woods in April.

while none of us would give up the annuals, there is so much satisfaction in a plant that comes up year after year. It makes one feel as though they had something to stay for in that one particular spot. That is something to be desired, a permanent home. And if you have planted a garden with trees, shrubs, fruit and flowers you certainly do not care to leave it.

So the members of this club are trying to make their gardens beautiful, for a lovely garden is as catching as the measles. Some one else is going to have one too. When we see some one trying to start a garden we try to help them, not only with advice, but with some of our surplus plants even though they are not members, we know they will soon want to join us. The exchanging of plants is one of the pleasant things about our club.

We meet on alternate Wednesdays at the home of some one of our members, some times having a regular program with papers, etc., at others just taking up the problems that come daily to all amateur gardeners, in looking at the garden of the member at whose home the meeting is being held, praising, criticising and giving advice as to the best methods of planting and taking care of the different plants.

And when an epidemic of cut worms, rose slugs or plant lice descend upon us we are prompt in telling our favorite methods of getting rid of these undesirable garden pests. To illustrate—my own particular method of getting rid of the green aphis is really a preventitive. I cover the ground thickly with strong tobacco around the rose bushes and am almost never troubled, while a spray of paris green the same strength as used for potatoes just before the leaves unfold, rids the bushes of slugs.

When we have papers, they must be the writer's own experience in raising those particular plants and shrubs, not something she has read. We do certainly read everything we can that will help us and try a good many of the suggestions and find many of them very helpful. But we have learned also not to be too credulous, as I was, for instance, when I read in a garden magazine that a good thick mulch was beneficial

to the Yucca and Dianthus. I tried it—result—no Yucca, no Dianthus.

We have visited some of the nurseries in the vicinity of Milwaukee, as a Club making selections of plants and shrubs while in bloom, even taking some of them home with us, safely transplanting them while in full bloom. We were quite sure we got what we wanted. We are also transplanting some of the native plants and shrubs and urging others to do the same.

We are trying to foster a spirit of civic pride, to induce people to mow the weeds on vacant lots, to beautify the school grounds. We are hoping to have a public meeting this winter with a good, live speaker from the W. S. H. S. to stir up enthusiasm. We are each and every one doing all we can to boost the State Fair, especially the Horticultural part of it. We are in hopes that many more Garden Clubs will be formed throughout the State this winter. We are in hopes that the Fair Board will allow us to exhibit as Garden Clubs. We want to fill that small building they call a Horticultural Hall, so full that they will be obliged to give us a larger building, for if they don't, they won't be able to get inside.

We are really doing nothing spectacular in our Garden Club. We are just a few people who are seeing—and learning to see more of the beauties of nature; enjoying life as we believe it was planned to enjoy it—with the trees, birds and flowers in our gardens.

Mrs. C. M. Strong.

See that all decaying vegetables in the cellar are removed.

The Home Orchard.

Several inquiries have been received since March 1st from people who want to plant a home orchard; varieties, where to buy trees, planting, etc., and every one a hurry up call. If these good people had considered this subject a few weeks earlier it would have been to their advantage.

The fall or early winter is the best time to order nursery stock as the buyer is then reasonably certain to get what he orders. Later orders, received when the supply of the standard sorts is exhausted, are apt to be liberally spotted with substitutions.

Blood Root, Sanguinaria Canadensis. Just a little later than Hepatica.

April, however, is not altogether too late to order trees and the following suggestions are offered for a farm orchard of 24 trees, two trees of each variety:

Orchard No. 1.

Apples	Tolman
Lubsk Queen	
Duchess	*Crabs*
Wealthy	Hyslop
McIntosh	Martha
Northwestern	*Plums*
Windsor	Surprise
Scott	De Soto

Orchard No. 2.

Apples	*Crabs*
2 Duchess	2 Hyslop
4 Wealthy	*Plums*
4 Northwestern	2 Hawkeye
4 Windsor	2 De Soto
2 Tolman	2 Sapa

For the north central counties substitute Malinda for Windsor and Patten Greening for Northwestern.

Plant the trees 25 feet apart on well drained soil that has been fitted as well as for a crop of corn or potatoes and cultivate as often and as thoroughly as for either of these crops.

Potatoes, beans or sweet corn may be grown between the tree rows for the first four or five years if the space between the trees is kept free from grass and weeds. Don't fail to cut back the tops severely at planting time.

Double Planting.

A member asks if it is advisable to plant plum trees between apple trees spaced 25 feet apart.

Ans: It would certainly be very unwise to do this. The plum trees would scarcely come to bearing age before the trees would crowd so badly as to prevent effective cultivation or spraying and in ten years or less neither apple nor plum would be worth cultivating or spraying.

A Question About Pruning.

Q. How much should the previous season's growth be cut back on apple trees which are two and three years planted?

Ans. Do not **cut back** at all unless in the case of too ambitious branches which have reached out or up so far as to injure the shape or the balance of the top. Shape the top of the tree by thinning, but do little heading back unless you want a dumpy tree.

Spray Pumps.

Dr. E. D. Ball, State Entomologist

Spray pumps may be roughly divided into four groups, according to size and capacity.

Bucket Pumps.

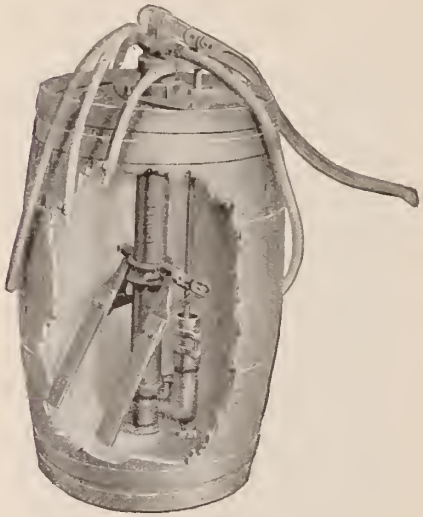
The first group consists of bucket pumps, knapsack sprayers, compressed air sprayers and similar small outfits ranging in cost from about four dollars to twenty dollars.

The small brass bucket type of pump, with a long lever, will give a fairly good pressure, and by putting on a much longer hose than that ordinarily furnished can be used for a large number of small jobs in town lots and small truck patches with good success and at a minimum cost of four to eight dollars.

The knapsack outfits, compressed air sprayers and that class are worth their cost where there is a large amount of truck which requires nothing more than mere sprinkling with poison or a fungicide and where it would be difficult to handle a wheeled outfit. They cost as much, however, as a well equipped barrel outfit and are incapable of furnishing any adequate pressure for serious spraying work, so they should be used only where all that is required of them is low pressure work.

Barrel Pumps.

The second class consists of barrel outfits which range in price for the pump alone from about six to fifteen dollars. Their value increases much more rapidly than the price, as they increase in weight and size of air chamber. The lighter ones, with small sized air chambers and simple cylinders do fairly good work when new, but as the inside of the cylinder wears it is impossible to tighten them up and they then begin to leak and lose pressure. The heavier types, with long, heavy handles, large air chambers and cylinders with stuffing boxes around the piston, are very efficient machines and within the limits of their capacity will do just as good work as the big power outfits. One of these heavy barrel sprayers



A very good Barrel pump.

equipped with 30 feet of ½ inch hose, a bamboo spray pole, a cut-off, an angle and a heavy nozzle, will handle 2 to 4 acres of orchard in first class shape, the total cost of the outfit amounting to about twenty dollars. By doubling the length of the hose, this may be used for spraying a small number of tall trees.

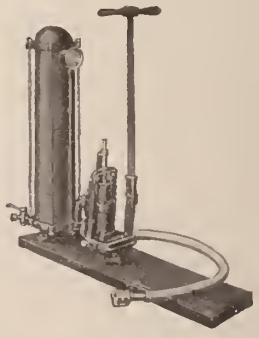
Double Acting Outfits.

Double acting pumps range in price from 30 to 60 dollars. The heavier they are, the larger the air chamber, and the heavier and longer the handle, the more pressure they will deliver. By using a long suction hose, three or four barrels may be carried at one time and used alternately.

Contrary to general supposition, these pumps are capable of carrying only one lead of hose and maintaining a high pressure, where efficient nozzles are used. Such an outfit will care for 6 or 8 acres of orchard and either this outfit or the larger barrel pumps may be equipped with a special device for spraying a number of rows of truck crops at one time.

The Gasoline Power Outfit.

This outfit involves an expenditure of 250 to 350 dollars when equipped with tank, truck and equipment, complete. For large orchards, cities or communities where there is considerable spraying, one of these outfits is a good investment. Oftentimes the same values can be obtained by using a gasoline engine in service for other work at other times but connecting to the double acting pump during the spraying season and thus materially reducing the cost of the equipment. The gasoline outfits are capable of handling only two leads of hose, where efficient nozzles are used, and should not be equipped with more. Anyone contemplating the purchase of one of these large outfits



A double acting pump. Made by the Deming Pump Co.

should write for special information and details of equipment.

What to Buy.

In general, buy the smallest type of equipment that will do

your work, but buy the best grade of which ever type is purchased and remember that it requires skill and knowledge to do thorough spraying with any type of outfit. More failure has resulted from wrong methods and lack of thoroughness in application—ten times over—than from inefficiency of poisons or of the equipment. The finest work that the writer ever did in spraying was with an old barrel outfit dug out of a scrap heap and re-packed, while some of the poorest work ever witnessed was done by power outfits in the hands of the hired men.

Dandelions.

A member asks the old, old question, old, yet ever new, how to rid a lawn of dandelions and weeds. If weeds thrive on a lawn it is evidence there is too little grass. The reason there is too little grass is because it has been starved out.

There are two practical means to remedy the difficulty; top-dress the lawn, spreading good loam mixed with well decayed manure over the whole surface from one to two inches deep. Any grass that may be left will push thru this top-dressing and more seed, the more the better, should be sowed and raked in.

The other plan is to completely renovate by spading deeply, thoroly pulverizing the soil and adding plenty of fine manure. One or two pounds of bone-meal to each square yard will pay.

While ordinary weeds can be driven out by increasing the number of grass plants, dandelions will not submit so readily to this treatment. About the only practical remedy is to pull them. Rich soil and thick seeding of grass will tend to keep down the seedlings.

Apples and Plums.

Q. 1. Is it advisable to plant fruit trees in an old orchard if the sod is plowed and kept cultivated?

Ans. Some other place where fruit trees have not been growing would be better, but if the newly set trees are well cared for good results may be expected.

2. Are one-year apple trees called whips better for planting than the two-year branched size?

Ans. A few years ago there was much favorable sentiment created for the one-year tree, largely by nurserymen, but now practically every one who has given both kinds a fair trial is ready to testify in favor of the two-year tree. The root system of the one-year tree is not sufficiently developed to withstand shipment and usually a whole winter's drying; it has too few well developed roots to stand this treatment. Again, there is practically one year lost in the growth of the tree; let the nurserymen grow the tree to planting size even if we have to pay more for it.

3. How much should native plum trees be cut back at planting time?

Ans. Take off most of the top. First cut out part of the branches, usually about one-half of them, and cut back the remainder to mere stubs.

4. How do the Hansen hybrid plums do in Wisconsin; are they hardier than the Americanas?

Ans. The Hansen hybrids, Hanska, Sapa, Opata and others, are certainly hardy but cannot excel the Americanas such as De Soto and Hawkeye, etc. in that respect. The Hansen group may excel the natives in quality and productiveness but that is yet to be proven.

Almost, but not quite, as good as a gasoline power outfit.

Don't plant more than enough apples to supply home use, unless they can be well taken care of. They are not a profitable crop on the average farm unless some attention is given them.

This from Minnesota, the greatest farm orchard state in the country!

Wisconsin Horticulture

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Rabbits Receive Recognition.

The big Fish and Game Bill, No. 46, S., now before the legislature, which constitutes a complete revision of the existing game laws, contains one provision which is of interest to every member of this Society. No matter whether you have one fruit tree or a thousand or for that matter none at all you are affected by this bill.

The item referred to provides a closed season for rabbits from Feb. 1st to Nov. 1st, and limits the "Bag" or the number that may be killed to five a day.

This affords most excellent protection for rabbits and at the rate of increase of this pest we are apt to have, before this law can be repealed two years hence, a condition similar to that in Australia.

Crows, English sparrows, blackbirds and hawks are outlawed while the rabbit is given better protection than any other game except deer and the rabbits cause more damage every year than crows, blackbirds and hawks combined.

For ten years past the editor has steadfastly opposed legislation designed to afford protection to rabbits, but without any support whatever but there seems to be a little more interest in the subject at the present time. The gardeners of Lake Geneva and the fruit growers associations of Door Co. have sent protests to the legislature.

Now, if every one who reads this who has suffered injury by rabbits will write to his assemblyman and to his senator protesting against this measure, it will have some effect.

The public hearing on the bill will be over before this appears in print, but it is unlikely that the bill will come to a vote in either house for several days after the hearing. The editor is interested in reports of injury by rabbits, but he is not a law maker. Go after your member and go **hard.**

Save the Maples!

The Cottony Maple Scale, which under ordinary conditions is not considered to be a serious pest, has been increasing at an alarming rate in the whole southeastern section of Wisconsin for several years. The dead and dying maple trees all over this section are a mute testimony of the destructive power of this pest when conditions are favorable.

This situation has become so critical that it will require prompt and efficient measures to save the remainder of the maple trees. There is nothing difficult in the destruction of this insect. The reason it has not been checked long ago is mainly on account of lack of proper equipment. Ordinary spraying outfits will not reach the tall trees and in many places even these outfits are not at hand.

A number of cities in this section are purchasing the proper equipment,—in most cases power outfits equipped with long spray poles and high towers,—and are going seriously to work to clean up their trees. With such an equipment it will cost only a dollar or two per tree and it is probable that one spraying will protect them for a number of years and that even in extreme cases, two thorough sprayings will clean up the pest.

It is to be hoped that every one of the larger barrel pumps and double acting outfits, as well as the power sprayers in this area will be furnished with the necessary equipment and put to work, as the time is short. The only really successful time to handle this insect is before the leaves appear in the spring, during which time kerosene emulsion of 15 or even 20 per cent strength, or a standard miscible oil like "Scalecide" or its relatives, may be used.

Among the best perennials to grow for cut flowers are gaillardias, peonies, Shasta daisies, coreopsis, Giant daisies, aquilegias, especially the Rocky Mountain species, delphiniums and iris.

A. J. Philips, Pioneer.

A. J. Philips of West Salem, honorary life member of this Society, secretary from 1892 to 1898, and veteran horticulturist died at a La Crosse hospital March 22nd, after an illness of three weeks.

While A. J. Philips was not a charter member, his membership dating from 1874, he was probably known to more people in the state than any other member of our society. He was a pioneer, "one who goes before, as into the wilderness, preparing the way for others to follow." "A. J." was one of that self sacrificing band of pioneers in horticulture who literally went before into the wilderness preparing the way that we of another generation are following.

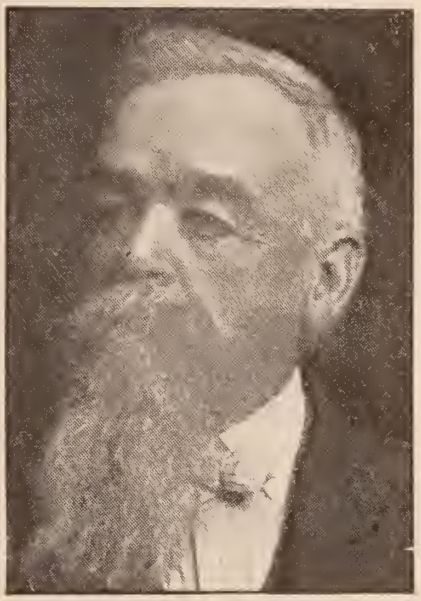
The labors of these men in the early days meant sure financial loss and they knew it. None of them expected nor dared hope that apple growing much less the growing of cherries would ever be of commercial importance in this state nor did they expect that their own particular orchards would be of commercial importance. They labored for the *home*, labored without expectation of financial reward, for pure love of the game.

This was strikingly true of A. J. Philips. The "old orchard on the hill white with bloom" lured him back from Dakota, where he had gone to raise sheep on the prairie; the trees he had planted and reared were a part of him. This old orchard which never yielded a car load of apples of one variety, tells the story of his life plainer than words can tell it. It might easily have been all of Wealthy, Northwestern, etc., tried and profitable kinds, but instead these gave way to seedlings, the new, the untried, the golden promise, the lure of the unknown. And the orchard yielded him *great profit*, altho not in dollars.

The following account of his life is from the La Crosse Tribune of March 23d.

Adoniram Judson Philips was born in Chester County, Pa., Oct. 17, 1834, the son of a Baptist minister.

He came west, settling in Watertown, Wis., and Big Creek, near Sparta, in 1855 and then to



A. J. PHILIPS.

the location in this county which he made his home for so many years.

In 1862 he was married. Mr. and Mrs. Philips raised a family of whom Charles of Savanna, Ill.; George and Dr. W. J., both of La Crosse, and Mrs. Wm. Storandt of Burr Oak and Mrs. George Shane of West Salem, still survive with their mother.

Among the "Old Settlers" of this county few have been so widely known throughout Wisconsin and Minnesota as Mr. Philips, stockman, agriculturist, horticulturist, breeder of splendid dairy stock and grafter of fruits, lecturer, writer, humanitarian and advocate of every righteous reform, charter member of the Wisconsin Horticultural Society and the La Crosse County Agricultural, Horticultural and Dairy association.

He was an unflagging officer of the Humane society in this county for many years and, despite the abuse that his action would incur, he never faltered in doing an officer's plain duty when he saw a case warranting it.

He was a life member of the Minnesota Horticultural society and lectured far and wide in that state as well as in his own and was a frequent contributor to the journals of both states for many years.

Growing organic troubles have been developing for a long time and reached an acute stage a few weeks ago and he was removed to a La Crosse hospital for treatment and nursing that he might have what measure of comfort it was possible to secure under the circumstances, there being little hope for any possible recovery from complications common enough to men of advanced age and almost certain in fatality.

There in the hospital at La Crosse, at the ripe age of eighty-three, the life one of incessant activity, he passed from here to the last frontier, and passing he leaves the once great circle of the "Pioneers" visibly contracted and reminds us that it will be a short time now until it must have disappeared altogether.

An evergreen windbreak is just as effective as a board fence and much more pleasant to look at.

It is well to wash the foliage of palms and ferns occasionally to keep dust and insects off.

Sowing Seeds Indoors.

Prof. J. G. Moore.

While the coal or gas heated house present some difficulties in starting plants indoors, it should be possible, if the more favorable conditions are selected, to secure vegetables somewhat earlier by this method. The seeds should be started in shallow boxes or pans, the boxes being preferable as they permit drainage and the plants are less likely to suffer from overwatering. The seed should preferably be sown in rows. It should be sown thin and as soon as possible after the plants are up they should be thinned or transplanted. Watering should occur at as long intervals as possible without allowing the plants to wilt. The lighter color of the surface soil is a good indicator of the need of water if watering has been properly done and there are facilities for drainage. Enough water should be applied at each application to thoroughly soak the soil. Frequent and insufficient waterings encourage unfavorable conditions.

When the plants beging to develop their first true leaves, transplant to shallow boxes or pots. Where pots are available, the plants can be handled somewhat more successfully than when set in boxes because from pots they can be repotted or set in the garden without any disturbance of the root system and with less likelihood of being checked. It is desirable to avoid as far as possible checking of the growth of the plant in producing early vegetables.

The seeds of certain vegetables are best sown in pots or dirt bands from which they may set in the garden without root disturance. These are the vegetables which are transplanted with difficulty. The vegetables most often handled by this method are cucumbers, squash and melons, but it is also possible to handle beans, corn and other garden crops in this manner. Sow the seed somewhat thicker than you desire the plants and thin to one or more plants, depending upon the size of the pot and the kind of plants.

All indoor or hotbed grown plants should be "hardened-off" before setting in the garden. This means accustoming the plant gradually to the conditions in which it will be placed when set out. On bright, warm days, ventilate or set the plants out of doors in the sun for a short time. Gradually increase the length of time the plants are exposed without injury until it is possible to leave them out unprotected over night. They are then ready for planting in the garden.

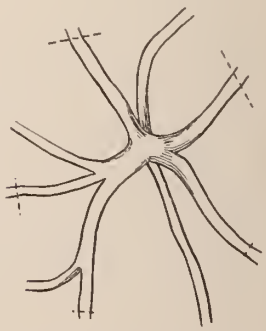
Top Grafting.

By top-grafting or top-working a worthless seedling or an undesirable variety may be changed to any desired variety. A short description of this method of making new trees from old was printed on p. 83 of the February number and what follows may be considered as supplementary to that.

Cions used for any kind of grafting are best cut while the trees from which they are taken are dormant, before there is any indication of growth. The books tell us that the cions **must** be taken during winter before the sap starts and stored in a cool place until the buds have started on the tree to be grafted. This is good advice, and if the cions can be kept from shriveling the top-grafting may be done any time, even when the trees are in full leaf. It is best to cut the cions early but it can still be done, April 1st. The writer has had excellent success in cutting the cions and immediately grafting them.

The way to make a cleft graft.

The one big mistake usually made by beginners is in grafting the whole top of the tree at one operation. A very small tree, a one-year-old whip planted one year with but little top growth might be safely treated in that way, but any older tree is quite apt to be killed outright by cutting off all the main branches. Graft one-half the branches leaving the balance to support the tree and a year from now if the grafts you set this spring "take," remove the remaining branches. Select the branches to be grafted so



A birds-eye view of an apple tree. The branches indicated by dotted lines to be grafted.

as to have a well balanced top. If you were a bird, or an aviator, you might make your selection of

branches as shown in the drawing.

Don't use long cions for top grafting, cut them to two, or at most three, buds each. Cover the tips and all cut surfaces with grafting wax.

The grafting wax sold by seedsmen and other dealers is usually worthless; make your own as follows:

Melt together 4 parts beeswax, 2 parts rosin and 1 part tallow. Pour the melted mixture into a pail of cold water, grease your hands and when cool enough to handle, knead and pull as in making molasses candy. Roll into sticks and wrap in waxed paper. This is good, old fashioned, reliable grafting wax that will keep indefinitely and when you put it on a tree will "stay put."

Tomato and Cabbage.

I just attended the institute at Manitowoc. Am an amateur in gardening, but have large lot here we would like to get some benefit from.

I think Mr. Rasmussen stated he would plant tomato seed *now*, to be transplanted several times and planted in garden June 1st. When would you sow seed for *early* cabbage plants, *late* cabbage plants? Would you transplant those plants and when plant them in garden. Please recommend some book or paper containing practical knowledge on gardening and oblige

M. K. J., Manitowoc Co.

Ans by N. A. Rasmussen.

We sow tomato seed from March 1 to the 20th, transplant twice and set out in the open about June 1.

The first early cabbage can be sown about March 20 and set out of doors about May 1. A little time can be gained by transplanting in cold frames before setting in the open.

Late cabbage should be sown in the open ground about the middle of May and set in the field July 1 to 10.

"Wisconsin Horticulture" is the most practical paper on gardening in Wisconsin altho it does not cover as much as "Market Growers Journal," which, however, is a southern paper. The former may be obtained by writing Fred Cranefield, Sec'y Wis. Hort. Soc., Madison, and the latter addressing Market Growers Journal, Louisville, Ky.

Overhead Watering and Other Items of Interest.

I would like some information in regard to your irrigation plant. How deep is your well, and how many leads of pipe run from the tank?

It has been my idea that if I wished to irrigate my twenty acre fruit and vegetable farm I would have to drill a well on the highest part and install some sort of a reservoir and pump with a gasoline engine. I would run the water in ditches between the rows directly from the reservoir. I do not see how I could put ditches between my strawberry rows as they would be mulched between the rows and could not remove the mulch to make ditches during the picking season.

I see in the report that you have a tank that holds about 600 barrels. What kind of a tank is it? What is the size of the pipes that you run underground, and what material?

Do you keep both horses and an auto to deliver with? Which is the best and which is the cheapest? I am one mile from my market and often wonder if it would pay me to own an auto delivery as I have to have horses anyway to work the soil.

B. F. G., Iowa.

Ans. by N. A. R.

My well is 230 feet deep, water raising to about 40 ft. of surface. We use 30 bl. tank, not 600 bbl., on a 30 ft. tower. The well is located on highest point of farm. We use a common deep well pump and gasoline engine for pumping, pump throws 1¼ in. stream.

This will take care of 2 leads of 1 in. pipe. Run pipes on top of ground using sprinklers such as are commonly used on lawns. We use these for both raspberries and strawberries, also for onions and other vegetables.

We have tried running water between rows, but without success. We pump and water thruout the day regardless of heat and sunshine. We find no advantage in allowing water to stand and warm, in fact we prefer it directly from the well as it seems to control more effectively the red spider and strawberry leaf-roller.

In regard to auto truck will say we find we can give far better service and with less expense than with horses.

STRAWBERRY PLANTS

100,000 choice Strawberry Plants. Also Red and Black Raspberry, Asparagus and Rhubarb Roots.

These plants will not be dug more than twenty-four hours before shipping. All stock guaranteed. Hot bed plants in season. Write for prices.

Rasmussen's Fruit Farm
Oshkosh, Wisconsin

Soluble Sulphur Compound.

A Walworth county member writes: "Will you kindly give me your opinion whether lime sulphur in liquid form is better than the dry form as put up by the —— Company?"

If the dry form will do what they claim, it would be much easier for one with a few trees than to use the liquid form.

Prof. Fracker of the State Dept. of Entomology, answers as follows:

This compound is used for two purposes,—one in combatting scale insects, especially San Jose Scale, and the other as a fungicide against apple scab and similar diseases. For the first purpose it is rather satisfactory, experiments indicating that it is about 15% to 25% less efficient than lime-sulphur. This is based on U. S. Department of Agriculture bulletin 278, pages 36 and 37, in which the soluble sulphur compound is called "commercial" sodium sulphide for the reason that the U. S. Department of Agriculture never publishes the name of commercial products. The average results of the experiments reported in this bulletin show an increase of fruit free from scale or lightly infested from 60% in the unsprayed plots to 94% in those sprayed with the soluble sulphur compound and 98% when sprayed with lime sulphur solution.

Soluble sulphur compound, however, is not satisfactory as a summer fungicide for the fungicide at this time is universally applied with an arsenical poison for codling moth and other chewing insects. The sulphur compound forms sodium arsenite when used in connection with an arsenical which is soluble and burns the foliage. Either Bordeaux mixture or lime-sulphur is superior for this purpose.

These results, I believe, agree with those published by the manufacturers of the dry compound in the bulletins which they have published, which report the result of the investigations on their part.

I do not understand your statement in regard to the increased convenience of the dry material. In both cases it is simply necessary to mix the product with water, no heating being necessary.

S. B. Fracker,
Assistant Entomologist.

The Culture of Pansies.

A member asks: What things are essential to success in growing pansies?

An expert, one who has had literally a life-time experience, answers as follows:

"It is a common notion that pansies require a shady location, and they are often planted close up under trees or on the north side of buildings where there is little or no sunshine. Pansies delight in a cool moist climate, but must have a reasonable amount of light and sunshine."

"The main points essential to success are, a reasonably rich soil, and *lots of cultivation*. Do not plant on a decided south slope except for early spring flowers, nor so close up to the exposed south side of a building that the heat reflected from the building will cook the plants. Pansies, and in fact but few flowering plants will do well planted so close up to trees that the trees rob them of fertility and moisture. An ideal location would be where they would receive all the morning sun but shaded in the afternoon. For long continued flowering, keep blossoms removed, and again, *cultivate or stir the soil often.*"

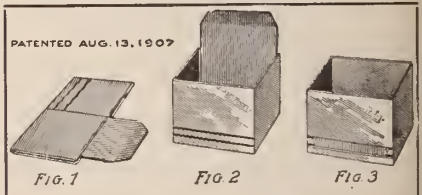
W. A. Toole.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.



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Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

More gardens will be started this year than ever before. Many will be expensive luxuries, while many well planned and well cared for will cut down living expenses. Every home should have its garden.

Grasselli
TRADE MARK
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SPRAY PRODUCTS

Arsenate of Lead

Paste or Powder
Lime Sulphur Solution

Recognized as standard in principal fruit growing sections of the country. Convenient source of supply for Wisconsin fruit growers. Sulphate of Nicotine 40% and free Nicotine 40%. For further information write

The Grasselli Chemical Co.
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JEWELL MINNESOTA GROWN
Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
Lake City, Minnesota

It's a Waste of Time Talking to Ignorant People.

A good and loyal member recently ordered a barrel of apples from his grocer and by way of conversation said to the grocer: "Why is it that we are never offered Wisconsin apples? You are always telling us about New York apples and western apples." His reply was to this effect, "There aren't any Wisconsin apples, are there? I never heard of any anyway."

Hence the headline.

Culture of Ferns for Home Decoration.

James Livingstone.

The Milwaukee Florist Club has asked me to write a short article on the above subject for Wisconsin Horticulture.

I have been asked, hundreds of times, by friends, why their ferns don't grow and I can assure you it is a hard question to answer. At least, it is hard to give advice, there are so many adverse conditions to combat. Hot, dry atmosphere, gas, dust, poor soil, careless watering and a host of other things that are against the successful culture of house ferns.

The varieties of ferns adapted to house culture are very limited, and yet, I should say that any one who can grow a good Boston fern would have fair success with some of the more tender varieties.

Study the nature of the plants, go to the woods and see them at home, examine the soil they are growing in and then imitate nature in your homes as far as possible. The proper soil for ferns is well rotted sod with plenty of leaf mold, enriched with well rotted manure and a liberal amount of sharp sand and charcoal. Don't sift the soil to make it fine, leave the sod in pieces the

(Continued on p. 127)

McKAY NURSERY COMPANY
PARDEEVILLE, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON
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Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year
Kellogg's Nurseries
Box 77, Janesville, Wis.

The Weakest Link.

Dr. E. D. Ball, State Entomologist

Just as a chain is no stronger than its weakest link, so any system of protection—whether it be against fire or flood, burglary or the depredation of insects—is no stronger than the weakest place in the system. A country might have every provision and requirement for war and yet if the roads were impassable, for example, it might be impossible to bring them together.

We see the same condition in attempted warfare on insects. Some serious pest suddenly appears, the entomologist is appealed to and directions are given, but some one thing necessary for success in the fight is lacking and the damage is done before it can be procured. Under Wisconsin conditions this one thing, more than any other, appears to be the lack of adequate spraying equipment in the different communities. Directions are sent out for spraying and a request comes back immediately for information as to *where* and *what* to procure in the way of a pump and by the time it is procured it is too late to do effective work. is like a fire engine in a city,—of no value at all except in emergencies, but invaluable at such times and absolutely essential for protection. Present day spray pumps are well made and with the exception of easily replaceable parts will with reasonable care last for many years, so that while their first cost (for the larger sizes) is considerable, it is distributed over so long a time that it is practically negligible in the end and at the same time their need is so great on certain occasions that even if they were never used again they would abundantly repay the outlay. Instead of that, once a spray pump is purchased and a regular system of spraying established, it will be found that numerous losses which have occurred from year to year can, with the expenditure of a very few cents, be reduced to a minimum or entirely eliminated, in most cases many times repaying the cost of the equipment each year of its use.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

A Dozen Different Dahlias For A Dollar, Post-paid

All good popular varieties. A collection that will please you. Strong "toes" or divisions. Order at once before you forget. A dollar will do it.

WILLIAM TOOLE & SON

Garry-nee-Dule Baraboo, Wis.

The Kickapoo Valley WISCONSIN' FAVORED FRUIT DISTRICT

Our Speciaty: Planting and developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

THE KICKAPOO DEVELOPMENT COMPANY
GAYS MILLS, WISCONSIN

One of the most effective shrubs in the garden or border in late autumn is the snowberry. Its large, well-grown clusters of snowy fruit are always attractive.

Test all field and garden seed now. It doesn't pay to plant dead seed. It costs little to make tests.

The following are good flowers for a fragrant garden: Sweet alyssum, mignonette, verbena, stock, heliotrope and nasturtium.

Grape fruit seeds plant thickly in a pot or pan of soil soon germinate, and the rather slow-growing stems make a pretty table decoration.

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Ferns for the Home.

(Continued from p. 125)

size of a walnut so that the whole mass, when well mixed, will have rather a rough appearance. I have even added pieces of broken bricks, or flower pots, to the compost.

Ferns require to be potted very firmly and in a compost mixed in this way will not get water logged. Next in importance to good soil is careful watering. The only safe guide in this is to rap the flower pot with the knuckles. If the plant needs water the flower pot will ring, if no water is required the pot will give forth a dull sound. If the plant needs water give it enough so that the water runs through the hole in the bottom of the pot.

When potting the plant put plenty of drainage over the hole in the bottom of the pot. Select one piece of broken flower pot large enough to cover the hole, and then lay other pieces overlapping each other until the bottom of the pot is completely covered, then finish off with a layer of finer pieces to the depth of an inch. This will secure ample drainage and will keep the plant from becoming water logged.

A plant that is allowed to get water logged will soon turn yellow and die off. When the plant gets well rooted a little feeding will help to keep it in growing condition, and I know of nothing as good as Clay's fertilizer for this purpose. A little of this scattered dry over the surface of the soil, and watered it will work wonders with the plant. Half a teaspoonful to a plant in a six inch pot every two or three weeks will be sufficient to keep a well rooted plant in growing condition.

When the fern plant becomes infected with scale it should be sprayed with a solution of nicotine, according to directions given on the package. Some people make the mistake in thinking that the spores or seeds growing on the back of the fronds are scales. This is a grave mistake, and these should not be interfered with. Spraying with a weak solution of ivory soap will also help to keep the plant free of scale and other injurious insects.

Keep the plants free from dust, and away from gas or other fumes. Give it plenty of pure air, plenty of light, without direct sunlight. Be careful about watering and feeding, and if your plants don't do well buy another and start all over again.

WANTED

Two Thousand Names of people who need a copy of the Spray Supplement, (March Wisconsin Horticulture.) Help spread the gospel of better fruit by sending to the Secretary names and addresses of friends and neighbors who are not but ought to be members of the Wisconsin State Horticultural Society.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

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WRITE FOR CIRCULARS AND INFORMATION

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VII | Madison, Wisconsin, April 17th, 1917 | Special Edition

WAR EXTRA

WISCONSIN INVADED: AN ARMY OF MILLIONS LED BY GENERALS APATHY, INDIFFERENCE, CONCEIT AND BOMBAST OVERRUN OUR STATE AND THREATEN OUR BASE OF SUPPLIES.

Wisconsin Horticulture

Published monthly by the
Wisconsin State Horticultural Society
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FREDERIC CRANEFIELD, Editor.
Secretary W. S. H. S., Madison, Wis.

Entered as second-class matter May 13, 1912, at the postoffice at Madison, Wisconsin, under the Act of March 3, 1879.

PROCLAMATION

Insomuch as our country is now engaged in a war with the central powers of Europe, the possible magnitude of which we must not underestimate, I feel it my duty to call the attention of the people of the state of Wisconsin to the sacrifices that we must make and the responsibilities that we must assume in order that we may fully co-operate with the national government in upholding the arms of our nation. Whatever disagreement there may have been about the necessity or advisability of engaging in the war is now a thing of the past. War is upon us and I call upon every citizen of the state of Wisconsin to aid in the preparations that must be made to meet every emergency and to enable our state to do its full share in the support of our government.

Military preparations must of necessity be controlled by the United States government. We shall be called upon to provide our quota of troops and I feel confident that Wisconsin's sons will respond to the call of the president of the United States willingly and promptly and with the same spirit of patriotism that has characterized our soldiers in the wars of former years.

Soldiers alone cannot carry on a war successfully. Battles cannot be won with empty commissaries. Troops must be equipped. Armies must be fed. No soldier can endure the hardships of a campaign unless he is properly nourished. It is with a view of awakening our civilian population to a full realization of their duty in the present situation, therefore, that I address this message to the people of Wisconsin.

The most important problem that confronts us now, and which must be met in no uncertain way, is to provide a supply of food. The high cost of living has been a source of complaint in our industrial centers for more than two years. The available stocks of food have been gradually depleted until we find ourselves practically without any surplus in our own country, and an absolute shortage seems to exist all over Europe. The price of some commodities, because of this shortage, has risen so high as to place them out of reach of the masses of the people.

To add to the seriousness of the situation is the fact that the South American grain crop is a partial failure and that a vast acreage of wheat in our own country has been winter killed. In the Canadian northwest there exists a shortage of labor, which will materially reduce the acreage of wheat in that section. The fact that we shall enlist a large army of able-bodied young men and take them out of production, coupled with the further fact that large numbers of laboring men will be required in the factories that will produce the munitions and other supplies for our army, may produce a similar shortage of labor in our agricultural districts.

I regard this as a serious situation, particularly in view of the fact that we must feed an army in addition to our industrial population, and also provide food supplies to the people of Europe with whom we are upon friendly terms.

In view of the foregoing, it is perfectly apparent that the man who works with a hoe will be a patriot in the service of his country, and I urge all who are able to work to contribute their part in the production of food, to the end at least that none shall contribute less than is required for their own support. What the country will need most are these plain articles of food: meat, potatoes and cereals for bread.

I urge every farmer in the state of Wisconsin who has suitable land, to plant enough wheat to produce the flour necessary for his own use, and a surplus if possible. I urge that he plant sufficient acreage of corn and, if possible, increase his herd of swine, to produce pork for the market. I particularly urge that the acreage of potatoes be increased. Every farmer should plant enough of this vegetable for his own use, and wherever the soil is suitable he should make his potato field as large as he is able eto cultivate.

I urge our farmers, as a matter of patriotic duty, to cultivate every foot of their soil; none of it is too poor to raise something. White navy beans and buckwheat will be in demand—in fact, anything that is food for man or beast will be a contribution to the pressing needs of our country.

Our farmers should require no greater inducement than the present high prices of all farm produce to encourage them in the cultivation of every foot of tillable soil. The fact that no large stocks of food will this year be carried over is in itself an assurance that the price of farm produce will be high for another year, even if peace were immediately declared.

It is reported that in some secetions there exists a shortage of seed, particularly potatoes. The department of agriculture of the state of Wisconsin stands ready to act as a clearing house in the matter of seed supply, and all who have a surplus of seed of any kind should so advise Mr. C. P. Norgord, commissioner of agriculture, Madison, Wis.; and all who are short of seed of any kind should address the same official, who stands ready with his department to co-operate with the farmers of the state to the fullest extent in the matter of securing suitable seeds to plant the crop.

In order that we may conserve labor for agriculture and the necessary industries I recommend that public work, so far as it is possible, be deferred until such a time as labor shall not be so urgently needed for these purposes as it is at present.

I wish to again impress upon the people of this state that the food situation is so serious that we will commit a moral wrong against our government if we in any way unnecessarily interfere with the production and successful harvesting of our agricultural products.

I ask that all bankers, business men, farmers, societies, agricultural associations, labor organizations and, so far as possible, the schools of the state, interest themselves in the matter of increasing our agricultural products.

I urge that the bankers of the state give aid in the form of loans, in reasonable sums, to farmers who may need assistance either in the purchase of seed or in the cultivation of crops.

I recommend to the people of the cities, towns and villages that they plant liberal crops of vegetables on the vacant property, in order that they may supply themselves and thereby be protected against high prices of such commodities.

I also recommend that the citizens practice all reasonable economy in the conservation of food, bearing in mind that under present conditions food wasted is food taken from someone who needs it.

EMANUEL L. PHILIPP,
Governor of Wisconsin.

Dated Madison, Wis., April 13, 1917.

WAKE UP!

DESERT THE ARMY OF GENERAL APATHY AND ENROLL UNDER GENERAL FOOD SUPPLY.

AN APPEAL TO MEMBERS OF THE STATE HORTICULTURAL SOCIETY!

The United States is at war and needs your help. The country is stripped bare of all surplus cereals and meats. The winter wheat crop for 1917 has been estimated by experts at fifty million bushels less than that of 1916, which in turn was below that of 1915.

The farmers of the nation already at their wits' end to secure help to cultivate their present acreage, will be further handicapped by the raising of an army of half a million men, possibly two millions, recruited largely from the farms and shops.

The food shortage is serious and will be more serious still before next fall. The United States Government can raise and equip an army and supply ammunition without end, but of what avail is an army without food. Of what account all the billions of money in the United States if there is insufficient food?

Food shortage is now a fact. This shortage now masquerades in the guise of high prices, but before another year the question of prices may be secondary, it may be easily be an entirely different question, that of getting food at all.

Readers who think these statements are exaggerated, who believe the editor is creating a bogy man, are respectfully invited to ask any one of the following if the editor is hysterical or if he is really stating the case mildly: Governor Philipp; Dean Russell or any of the professors of the Agricultural College; Commissioner Norgord or any of his assistants; any official of the U. S. Department of Agriculture at Washington. You will surely agree that these men are in a position to know. Also read your daily paper.

THE DUTY OF THOSE WHO KNOW HOW.

Hundreds of the best gardeners in the state, both professional and amateur, are enrolled as members of this Society. There is an opportunity **now** for you to do a service to others such as you may not have again in your life time. Not only increase the yield in your own gardens but urge others, even plead, with them to plant gardens and—when you have succeeded help these beginners with your counsel and advice. Service! After all, that's all there is in this life worth living for, doing something for others!

MEMBERS WHO LIVE IN CITIES AND VILLAGES.

This appeal is directed largely to you. No matter what your age or occupation if you are not physically disabled you can cultivate a piece of land. You can raise vegetables which will take the place in part of cereals. If the back yards and vacant lots of Milwaukee, Oshkosh, Superior, Racine, Kenosha and hundreds of smaller citites and towns sufficient vegetables can be raised to largely supply the people of these places.

Have you such a back yard? If you have, plant vegetables; if not get a piece of land no matter how small. In many cities owners of vacant property are offering the use of the land free.

WHAT CAN WE DO?

Members of this Society can do much toward increasing the food supply. We cannot raise wheat or corn in back yards, but we can more than double the production of winter vegetables if we try and in this work **every** member, man or woman, old or young, can help.

Even if we cannot carry a knapsack and a gun we can still be good soldiers.

WHAT TO PLANT.

In very small gardens 20 x 50 ft. or smaller, plant beans, parsnips, carrots, beets, winter squash and tomatoes and a few hills of potatoes.

The tomatoes can be trained to single stems and tied to stakes and the squash planted along the border, can be trained on a trellis or even on the back porch.

Lettuce, radishes and spinach may be grown between the rows of parsnips, etc. Plant early peas and sow cabbage seed either in boxes or in open ground to supply plants for planting after the peas are harvested. Dig and plant NOW. Questions of cultivating, hoeing and watering will be taken up later.

In gardens 50 by 100 feet and larger plant potatoes and sweet corn in addition to the other vegetables named and increase the bean patch using Refugee wax. This is a very prolific green podded variety, excellent for snap beans and equally as good as the navy for winter use.

FOR THE W. S. H. S. MEMBER WHO NEVER PLANTED A GARDEN.

Don't be ashamed to ask questions. Ask your friend or neighbor; get an A. B. C. book on gardening from the free library, or, if you can't do any better, get a seed catalog and study it. Some of the catalogs give excellent directions for beginners. Above all, **Ask Questions.**

TO THE W. S. H. S. MEMBER WHO WORKS IN SHOP OR FACTORY.

Perhaps you feel that it is expecting too much of you to work in the garden either before or after your day's work of 8 or 10 hours. It won't hurt you a bit. The writer knows of one instance, some years ago, where a slightly built individual, never physically robust, who worked ten hours a day at digging and hoeing, planting and at all the hard work that goes with gardening and in addition worked two hours a day in his home garden and is still alive. You **can** if you **will.**

TO THE WOMEN OF THE W. S. H. S.

Not Least or Last, but First. You can do more than all the men combined if you will. Some of you can work in the gardens. Some of you can supervise children's gardens, but all of you can **persuade.**

The good Lord knows it! And so do all men. So employ those heaven-sent powers of persuasion that you know so well how to use to get gardens planted. Will you?

TO THE BOYS AND GIRLS OF THE W. S. H. S.

If you live in a city join the Boys' and Girls' Garden Movement. Nearly every city in the state has such an organization. If there is none you boys and girls get together and start one, you are big enough to do it. This gardening work is play if it is worked out in the right way.

We need you, boys and girls. An hour a day this spring and summer in a garden will help, indirectly, to feed starving children across the ocean.

EVEN IF THE WAR ENDS TOMORROW.

The need is quite as urgent as if the war continues a year or three years. The food supply of the world is short and daily growing shorter. If the war ends before the ink on this page is dry every ounce of food that can be produced thruout the world will be needed.

Millions of Belgians, including hundreds of thousands of innocent children are now slowly starving to death. Millions of others in the warring countries haven't had a square meal in two years and will take all the food we can spare. Whenever we produce for our own needs we release other supplies for those who are now hungry and will be hungry for many months to come.

COAL ASHES.

The soil in back yards is apt to be heavy. A liberal supply of coal ashes worked into the soil when spading will help. If no wood was burned, except occasional kindling, an unlimited amount of the ashes may be used. Coal ashes, however, contain practically no elements of fertility.

USE LIME FOR SOUR SOIL.

Many garden soils are sour. To offset this as well as to improve the physical properties of clay soils use lime, either fresh or burnt lime or slaked lime; if the former on a plot 50 by 100 feet use 100 pounds, pulverized and raked in after digging and before planting. If air slaked, use 1–150 lbs.

CITY AND HOME ADORNMENT CAN WAIT.

Governor Philipp says in his message to you: "I wish to again impress upon the people of this state that the food situation is so serious that we will commit a moral wrong against our government if we in any way unnecessarily interfere with the production and successful harvesting of our agricultural products."

Any community which now expends time and money purely for adornment is committing "a moral wrong against our government." These things can wait. Use this energy and money to get gardens planted. The individual, no matter how comfortable he may be financially who now spends large sums in beautifying his home grounds and nothing in the effort to increase the production of food is committing "a moral wrong against our government." Keep up the parks, but spend nothing additional on them. Keep your home grounds neat and attractive but plant more potatoes and fewer flowers,—this year. Next year we can make up for lost time.

WHAT NOT TO PLANT!

In small gardens do not attempt to grow sweet corn, cucumbers, eggplant, cauliflower or melons, as these take up too much room. Forego also planting such "fancy" kinds as brussel sprouts, artichoke, etc. Stick to root crops largely —kinds that will fill the vegetable bins next fall.

WELL ROTTED BARN YARD MANURE BEST.

Neither coal ashes nor lime will take the place of manure. Where available, use liberally. Spread so as to completely cover the surface or even to a depth of two or three inches and dig or plow under.

For fifty-two years our Society has labored unselfishly to "make the land fruitful" and to instil a love of the beautiful in the hearts of our people.

A greater need has now arisen than any we have ever before known. Let us set our hands to this task in the same steadfast, earnest manner in which we have faced our problems in the past.

Let us show to all the world that the horticulturists are not "slackers" but workers and "doers."

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII | Madison, Wisconsin, May, 1917 | Number 9

"But the right is more precious than peace, and we shall fight for the things which we have always carried nearest our hearts, for democracy, for the right of those who submit to authority to have a voice in their own government, for the rights and liberties of small nations, for a universal dominion of right by such a concert of free peoples as shall bring peace and safety to all nations and make the world itself at last free.

"To such a task we can dedicate our lives and our fortunes, everything that we are and everything that we have, with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principles that gave her birth and happiness and the peace which she has treasured. God helping her, she can do no other."

—President Wilson.

Planting the Garden.

By J. R. Hepler, College of Agriculture, University of Wisconsin.

The first and most important part of a good garden is a well prepared seed bed. The soil should be free from sticks, stones, and clods, and should be in perfect tilth. It may be necessary to rake the garden three or four times and use a hoe or the back of the rake to break up the lumps of soil, but such extra labor is well repaid.

After the soil is in condition for planting, the rows of the garden may be laid out according to the plan previously prepared. There should be two permanent stakes at each end of the garden and then all measurements made from these stakes. The rows may be marked by putting small sticks or labels, at each end of the row, on which is written the name of the vegetable. It is then a very simple matter to get the row straight by stretching a line and planting under it. Viable seed need moisture, air, and warmth to germinate. Seeds must absorb moisture from the soil before they germinate. That is why they often lie dormant for two or three weeks in dry soil before they sprout. Firming the soil over the seed to establish capillarity, planting the seed deeper in dry soil, and sprinkling the soil after planting are ways of supplying moisture to the seed.

Because it shuts out the air and often causes the seed to rot, too much moisture is almost as bad as not enough. Thorough drainage or lightening the soil with sand or manure, will usually correct this condition.

Plant at Right Depth.

The depth of planting depends on the moisture content of the soil, the character of the soil as regards fineness, and the age of the seed. Seeds must be planted deep enough that they will get a sufficient amount of moisture for germination, and yet shallow enough that they can push their way to the surface of the soil. The moister and finer the soil, the shallower the seed is planted. Seeds are planted shallower in heavy soil than in light soil. If a heavy rain falls shortly after making a planting of small seeds in a clayey soil, the ground is likely to bake so hard that the seedlings cannot push their way to the surface of the soil until the crust is broken by tillage or softened by another rain. If the soil is lightened by the addition of either organic matter or sand, small seedlings will without difficulty push their way through an inch or more of soil.

As a general rule, the larger the seed, the deeper it must be planted. Very small seeds like celery do not have strength enough to push their way through an inch or two of soil. Such seeds may be covered with a very light sprinkling of soil or even with a cloth, or with paper. Peas may be planted deeper than beans because in germinating they keep their cotyledons or seed leaves below ground. The general rule is to make the minimum depth of planting at least two times the diameter of the seed.

Consider Growing Temperatures.

Garden seeds germinate the best at approximately the same temperature at which they make their growth. Thus the cool season crops germinate best at a temperature around 50 to 60, while warm season crops, such as muskmelons and egg plant, must have a temperature of 65 to 70 to germinate, and germinate better at a higher temperature. This factor determines very largely the time of planting. It is useless to plant seeds of the warm-season crops before the soil warms up, because the plants are likely to be weak and to produce a very small crop. If it is desired to germinate cool season seeds like lettuce during the hot summer months, it may be accomplished by keeping the seed bed moist and keeping it shaded with a covering of moist hay or straw to reduce the temperature.

"Drilling" the Seeds.

In making a drill, use a pointed stick or the handle of the hoe for shallow drills and the corner of the hoe or a trowel for the deeper drills. Always use a line to get straight rows. Care should be exercised not to crowd the line out of position.

Seeds may be dropped into the drill in several ways, the most common of which is by hand, using the thumb and forefinger. A supply of seed is held in the palm of the hand and rolled out over the forefinger by the tip of the thumb. This is a slow and tiresome method, but is very accurate. A quicker and easier way is to cut off one end of an ordinary envelope and drop the seed by a backward and forward motion of the hand. Although at first there is a tendency to sow the seed unevenly, a person soon becomes expert at this method and can distribute the seed evenly.

Gardeners make use of a seed drill which costs from $7 to $8. Where much seeding is done, the seed drill is indispensable.

The seeds may be covered with a hoe or a rake. After covering the drill, the soil should be firmed so as to get the seed in contact with the soil and re-establish capillarity.

Broadcast Only on Clean Land

Broadcasting the seed is advisable only where the soil is free from weeds and where the crop grown stays in the ground for a short period of time. Radishes are sometimes sown broadcast and plants for transplanting are often grown by this method. If the seedlings are not replanted before they are set in the field, they are usually stockier when the seed is broadcasted.

If vegetables are planted in hills, the seed is usually scattered over a circle six to ten inches in diameter. From three to four times as many seeds are planted as we want plants, in order to provide against loss by insects. This is especially important with vine crops.

Thinning the Seedlings

Although commercial gardeners regulate the amount of seed that they sow so that they will need to do very little thinning, the home gardener usually finds his stand of seedlings three or four times as thick as necessary. The first thinning is done when the garden is weeded for the first time. The amount of thinning depends upon the thickness of the stand and the amount of space that the plant needs. A hand weeder with a sharp blade at right angles to the handle is a very good instrument to use in the thinning. Later thinning, especially with root crops, consists in the pulling of the largest of the plants and using them on the table.

Radishes as "Marker" Crop

A marker crop of radishes is often grown with the slow germinating vegetables. The seed is sown very thinly at the time the permanent crop is put in. It breaks the ground for the other crop and also enables one to cultivate between rows. The plan works best with carrots and parsnips. The radishes are allowed to mature but should be removed as soon as they are big enough to use.

The Cherry Leaf Spot.

A Door Co. member asked about treatment for cherry leaf spot commonly known as "shot-hole" fungus. The letter was referred to Professor Keitt, who replied as follows:

In our work on this disease we have found clean cultivation **in the spring well before the blossoms open** followed by thorough spraying to be a satisfactory means of controlling the disease. In some cases, it may not be practicable to give clean culture so early, but usually cultivation is given at this time anyway for other reasons. The fungus which causes this disease lives over winter in the old dead leaves on the ground, and about blossoming time produces "seeds" too small to be seen except with a powerful microscope, which are carried by the air to the young leaves. There they grow and cause the disease. From these early spots, a great many more seeds are produced, and these spread the disease. By carefully turning or harrowing under the leaves before they produce the first seeds—that is well before the blossoming period—the disease can be greatly checked—just as you can check the spread of many weeds by cutting before they seed. It is, of course, the early clean culture that counts, as the seeds of the fungus are shed before the summer cultivations.

This early cultivation does not take the place of spraying. It simply makes it easier to control the disease by spray. There is still some question as to the best spray program for shot hole. It will vary with conditions. Good results have been obtained with Bordeaux mixture, 4-4-50, or 3-3-50, and with lime-sulphur, 5 or 6 quarts in 50 gallons. Lime-sulphur seems to control shot hole better if arsenate of lead is used with it. The following timing of applications has given good results: Spray (1) as soon as the petals (blossoms) are off, (2) about two weeks later, and (3) as soon as the fruit is picked. The leaves should be well covered on both the upper and the under surfaces. If the leaves are not turned under before blossoming, it may, in extreme cases, be desirable to give three treatments before picking—the first when most of the petals (blossoms) are off, the second about ten days later, and the third about two weeks after the second.

G. W. Keitt.

Sticktoitiveness.

Not in the dictionary and it is doubtful if it ever will be there, but it expresses a qualification much to be desired in amateur gardeners.

A City Garden.

(Mrs. John Geiger, Oshkosh, at Annual Convention.)

The subject assigned to me is A City Garden and having passed the High School age, I can write only upon a subject of which I know a little something at least—and in writing about A City Garden I can only tell a little of my own experience. This has been confined to my own garden which is the back yard of an average sized city lot. Planning, planting and caring for this garden has been my principal recreation for a number of years.

Having been raised in the country, I, no doubt, inherited a natural liking for digging in the dirt and watching things grow. These things seem to be absolutely necessary to my happiness.

City dwellings are usually without front yards of a sufficient size to permit of much planting except perhaps around the foundation of the house, so attention must be given to the back yard.

Almost everyone, who does not live in an apartment, has at least a small plot of ground back of the house which too often is simply a dumping ground for refuse and a place to hang up the washing. Even though the backyard is a small one it may be made to yield much in fun and food, health and happiness.

Gardening is man's greatest outdoor sport, antedating war and golf by Scriptural account

The fact that we live such strenuous lives in the city makes it all the more necessary that we provide for ourselves an opportunity to relax and regain strength amid beautiful surroundings and a little garden spot in the back yard is one of the best places in the world to rest after a day of nervous strain.

Almost any patch of ground will grow something well worth while if given only half a chance. There probably is not a back yard in any small city that would not yield wonderful returns if it were planted and cared for.

What an excellent thing it would be for the community if all the land which now lies idle were planted to useful and beautiful things! We must buy vegetables unless we grow them, and in this time of high cost of living, raising one's own vegetables will make a material difference in the household expenses, while the increased consumption of good, fresh vegetables will greatly improve the health of the family. And to a great many of us flowers are just as necessary to our happiness as fresh vegetables are for our health.

Sunlight, good drainage, a good soil, a few good tools, such as a spading fork, a rake, a good strong hoe and a trowel, the very best seed obtainable, together with a love for the work, are all that are necessary to start a garden.

Each one must decide for himself what he wants to raise in his own garden, but it is possible, by careful planning and planting and cultivating, to raise practically all the vegetables the average family will want, in the back yard of the average sized city lot, as well as one's favorite flowers to brighten and beautify the home from early spring until the snow flies.

If one has only a small garden, a few rhubarb roots, a small asparagus bed, a few currant and gooseberry bushes and a strawberry patch are not out of the question and will furnish many a delicious dessert. Two or three grape vines may also be planted along the fence and will add much to the beauty of the landscape.

Intensive farming is what must be practiced in the city garden because of lack of space. The crops must be planted so that all the ground is used all the time.

Our springtime enthusiasm will start the garden off in fine shape and we plant some lettuce and radishes, some tomatoes and cucumbers and our favorite flower seeds. The early vegetables will be harvested early and unless we plan to plant other crops on the same ground only part of the ground will be working after the early vegetables are gone. By a little thought and planning in advance, at least two or three crops may be raised on the same ground. Lettuce and early radishes can be planted together in the same rows and between these rows set tomato or early cabbage plants. By the time these plants are of any size the lettuce and radishes are gone. In the same way peppers, cauliflower or kohl-rabi may be set between the rows of onions. By planting at intervals and by using different varieties, a great many of the quick growing vegetables may be had practically all summer instead of only a few weeks in the spring.

But the planting is only a small part of raising a garden. It is not enough to know what to grow and how to plant it, but we must also know what not to have in a garden, and first in this class comes weeds.

Weeds, like the poor, are always with us; but, unlike the poor, they need no assistance, but the strongest possible resistance. Cut off their heads and cut off

their feet and do it before they have any offspring. Then start in and do it all over again, for they have a wonderful way of resurrecting if given half a chance. When hot weather comes the garden needs our help more than at any other time for then the weeds seem to grow the fastest. And then it is that we feel less like giving it the necessary care.

The weather is hot, the air is still and the mosquitoes are all out for blood, so that a hammock in a cool corner of a screened-in porch looks better to us than any "Man with the Hoe" tableau—especially after a hard day's work. Probably we feel that we do not need the exercise nearly so much as we did in the spring, and probably we are right, but at the same time it will do us good if we take it properly; and we can not afford to let the garden go to pieces now when a little work will save it.

Let us get up an hour earlier than usual in the morning and do our garden work then instead of waiting till evening when we are all tired out. A little daily work in the garden in the cool of the morning will do us much more good than would that little extra sleep. Nature is at her loveliest while the dew is on, and half of the fun in gardening is getting close to nature. So let us do our gardening before we are tired out and enjoy it to the utmost.

The pecuniary profits derived from a garden are of no more importance than the beautifying of our surroundings. No one can live amid beautiful and ennobling surroundings without being influenced for the better, even though it be unconsciously.

In these days we hear a great deal about the "Boy Problem" in our cities, but in the country this problem is scarcely ever heard of. It seems to me this is simply because in the country the boy is kept busy while in the city so many boys have nothing to do so much of the time and "Mischief always finds some work for idle hands to do."

The thing we must do in the city is to find something to keep our boys yes, and our girls, too, busy, and the back-yard garden is a splendid place in which to do this. Right here is where the mother of a family can get benefits beyond calculation for the boys and girls if she is clever enough to interest them in gardening and that there is just as much fun in using a hoe as in wielding a tennis racket. It is then much more than gardening, it is character building of which we read so much and see so little in actual practice.

A Back Yard Garden to Aid Food Production.

Sow at once carrots, onions, parsnips and salsify for early use and what is not needed may be left for the winter supply. Mix these seeds with radish seeds which will come up in 2 or 3 days, thus enabling one to cultivate or hoe between the rows, giving the other seeds a much better chance to come up especially if heavy rains fall and pack the ground. This also gives you radishes for the table without extra expense to your garden. Spinach and lettuce may be followed by potatoes and early peas by turnips and rutabagas. Tomatoes may follow early beets by pulling a few beets where the tomato is to be set, or early beets may be followed by late beets, turnips and rutabagas. Thoroughly cultivate and sow these seeds between the rows when early beets are nearly full grown.

By planting Golden Bantam sweet corn 3 by 3 ft. five kernels of corn and 4 Refugee or 1,000 to 1 Beans in the same hill both will do better than if planted alone and produce a large quantity of food. Golden Hubbard Squash may be planted so as to climb on your porch, fence or a tree and it will not demand any room in your garden and will produce more than if left on the ground.

If you have only a strip of ground, say 2 by 15ft. beside your house or fence, plant Champion of England peas, Kentucky Wonder Beans and Late Stone tomatoes, grow on stakes or trellis and plant root crops below and perhaps one squash seed at either end. You will be surprised at the amount of vegetables which can be produced on this small space.

N. A. Rasmussen.

First Principles.

A large part of this issue is devoted to the A. B. C. of gardening, largely timely and practical bulletins issued by the horticultural department of the Agricultural College. While most of these articles have been printed in whole or in part in the daily and weekly papers of the state, such papers are rarely preserved and the bringing together of these practical hints in one place should prove helpful to many of our readers.

Give cauliflower, cabbage, and celery plants that are in frames, plenty of air.

Directions on Growing Potatoes in the Garden.

Prof. J. G. Milward.

On good, fertile gardens, potatoes should be planted close, rows approximately two feet apart and the hills about one foot apart in the row.

The soil should be spaded deep, thoroughly pulverized, and worked with garden tools. The potato crop likes a deep, cool, fertile and well drained sandy loam soil, but will grow satisfactorily in most gardens of the state. Stable manure may be used if well cut up and mixed with the soil at the time of spading.

Early varieties are preferred for the garden, as such stock can be used for table purposes late in July, August, and September, before the main commercial crop of the state comes on. Early Ohio and Triumph are preferred for early, and the Rural New Yorker for late.

Cut seed tubers into blocky pieces (not thin slices), at least one good, strong eye to the piece. Seed tubers exposed to light a few days before planting will start strong, stubby sprouts, and it is desirable to plant seed in this condition. Seed pieces should run approximately one and one-half to two ounces in size. Small potatoes, (3 or 4 ounces), may be cut lengthwise in halves.

Potatoes are commonly planted with a hoe, one seed piece to each hill. Plant from 3 to 4 inches deep. It is also satisfactory to make a furrow with the hoe or garden tool three to four inches deep and then drop the seed pieces every foot and cover promptly.

Rake the potato patch after planting and after rains. Prevent crust from forming by use of rake or garden cultivator. When plants come up, cultivate carefully, keeping the surface soil mellow and compact around the plants. On clay loam gardens, the potato patch should be kept fairly level. During early summer and after vines become larger, the soil may be ridged and moulded slightly around the hills. Be careful not to cut into hills deeply with hoe or garden tools.

On small gardens, it is advisable to pick the old potato beetles by hand from the vines as soon as they appear. Clusters of potato beetle eggs may also be pinched off. Should the eggs hatch, however, the young bugs can be killed by the use of one tablespoonful of Paris green to a pail of water. Paris green may also be used in the dry form by diluting with equal parts of flour, land plaster, or air slaked lime.

How About Sod Land For a Garden?

This question is asked again and again. The professional gardener who is satisfied with nothing less than deep loam manured to the limit every year will say that it can't be done. Managers of Garden Clubs in many cities will tell you it **can** be done because they have done it.

Much depends on the preparation of the soil for planting. Tough June grass sod of years' standing simply plowed and scratched with a harrow makes a mighty poor foundation for a garden. The grass turned under serves to shut off the water supply and the tough grass roots hinder cultivation, but if this same sod is thoroughly chewed up by a disk and then dragged or raked level removing the larger clumps of grass brought to the surface it provides a fine seed bed. If possible, a heavy coat of manure should be applied before plowing, but very good results may be had without it. Quack grass sod is the worst of all to handle, but even this is not hopeless, just more work, that's all.

Training Tomatoes.

Tomato plants may be planted one foot apart in the row or even less if trained to a **single stem**. The plants may be tied to stakes or to stout string. Instead of filling the garden with a forest of stakes, which must be at least 2 x 2 inches if a stake is used for each plant, set small posts 16 ft. apart along the row and fasten 2 x 4 scantling to their top and bottom. The tomato plants can then be tied to strings attached to the scantling. The expense is considerable but this structure is the framework of a trellis that can be used for many years and for a great variety of plants.

If the plants are trained to three or more stems two feet apart is close enough and individual stakes are best.

As soon as we begin to prune a tomato plant we set for ourselves a big task and one that demands close attention every day to the very end of the season.

It is not, however, a laborious task, nor does it require but a few minutes a day. Sprouts which will appear in the axil of every leaf must be removed. When the plant reaches the desired height cut off its head.

The training system is almost a necessity in small gardens.

Planning the Garden.

By J. P. Hepler, College of Agriculture, University of Wisconsin.

The greatest returns can be obtained from the garden only when the garden is definitely planned. The difference in times required for maturity and of space needed by different vegetables, the season at which they grow best, and the greatest utilization of the garden area practically necessitate a garden plan.

Three Classes of Garden Crops.

In garden planning, the first thing to recognize is that garden crops may be grouped into three general classes: permanent crops (those which occupy the alloted area during the entire season; semi-permanent crops (those which are planted rather late and after planting occupy the area so long as to usually preclude the growing of other crops after they are removed); and short season crops (those which occupy the land for a comparatively short period). In the first group we have late beets, late carrots, parsnips, salsify, chard, parsley, early tomatoes and onions grown from seed. The second group are sweet corn, late tomatoes, late cabbage, celery, eggplant, peppers, late beans, and the vine crops. The third group contains lettuce, spinach, early beans, peas, radishes, turnips, onions from sets, and early cabbage.

In making the plan for the city garden, the permanent and semi-permanent crops should be given first attention. The short season crops are easily provided for either as succession crops or as companion crops. Succession cropping is following one crop with another on the same area. Early radishes or lettuce followed by late cabbage or celery is an example of succession cropping. Companion cropping is growing a short season crop between the rows of those which are permanent or semi-permanent. Early carrots or early beets between corn or late tomatoes furnishes an illustration of companion cropping. The most successful gardener is the one who, through well-planned succession and companion cropping, makes his garden produce the maximum of which it is capable.

In the city garden, the distances between rows should be kept at the minimum and still allow for proper development of the plants and ease of tillage operations. The following table will be of assistance in determining the distances to be used. Attention is called to the fact that where companion cropping is done, the distance between the rows of permanent or semi-permanent crops remains the same, the companion crops merely being placed between the rows.

Crop	Method of planting	Time of first planting	Distances between rows		Distance in row	Time crop occupies ground
			Min.	Max.	(Inches)	
Beet	Drills	May 1	12	24	3	10 weeks to end of season.
Carrot	Drills	May 1	12	24	2	10 weeks to end of season.
Parsnip	Drills	May 1	12	24	3	All season.
Radish	Drills	Apr. 20	6	15	1	4-7 weeks.
Salsify	Drills	May 1	12	34	2	All season
Turnip	Drills	Apr. 20	9	15	3	6-8 weeks
Rutabaga	Drills	May 15	18	24	6	10 weeks to end of season.
Onion	Drills	Apr. 20	12	18	3	8-12 weeds.
Early Cabbage	Hills	May 1	18	24	14-18	10-12 weeks.
Late Cabbage	Hills	June 20	24	36	18-20	End of season.
Chard	Hills	May 1	18	24	8-12	All season.
Celery	Hills	May 15				
		July 1	18	36	6	12-15 weeks.
Lettuce	Both	Apr. 20	12	24	8	6-8 weeks.
Endive	Hills	July 15	12	24	6	6-8 weeks.
Spinach	Drills	Apr. 20	12	24	1-2	5-8 weeks.
Parsley	Both	May 1	12	24	2-6	All season.
Pea	Drills	Apr. 20	18	30	2-3	7-10 weeks.
Bean	Both	May 20	18	30	3-4	7-10 weeks.
Eggplant	Hills	June 5	24	30	18	All season.
Pepper	Hills	June 5	24	30	18	All season.
Tomato	Hills	June 1	24	30	24-48	All season.
Cucumber	Hills	June 1	43	72	48-60	All season.
Muskmelon	Hills	June 1	48	72	48-60	All season.
Squash	Hills	May 25	48	96	48-95	All season.
Sweet Corn	Hills	May 15	24	36	8-12	10-12 weeks.
Winter Radish	Drills	Aug. 1	12	24	3-4	To end of season.
Chinese Cabbage	Hills	Aug. 1	16	24	12	To end of season.

Companion Cropping.

In planning for companion and succession cropping, it is essential that the season at which the crop grows best and the time required for it to mature be given consideration. If this is not done there will be overlapping of crops and unsatisfactory results.

Potatoes Require Much Room.

Potato "seed" is prepared by cutting potatoes into irregular shaped pieces so that each piece has two or three eyes, preferably three. These are planted at least 12 inches apart in the row and the rows 24 to 30 inches apart. When whole potatoes are used, small ones, these are planted at least two feet apart. At this rate the average "back lotter" cannot afford to grow potatoes.

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Our Duty.

Men and Women of the State Horticultural Society! A great responsibility rests on us.

The nation is at war and the end of the war cannot be foreseen.

The surplus food supply of the world is exhausted and crop prospects for 1917 are not encouraging so far as cereals are concerned.

Awaken then to the needs of the hour!

The great danger lies in indifference. Two things every one of us can do, first, **plant, plant,** sow seeds **now** and urge others to do the same.

Second, **Talk War,** talk it day and night until it has penetrated the conscience of every man and woman of this land that we have signed up for war, a war that is bound to take its toll of lives great or small and bring sorrow and desolation to many of us. We cannot evade it, it is here, now and until we end it.

Let us then do our duty, give the best that is in us in order that it may end quickly. It will fall to many to go as fighting men. It falls to most of us to perform another kind of service, but one none the less patriotic, to feed the nation.

The stronger the force we send in to the field, the greater the aid we extend to those who are fighting with us the sooner will the hideous monster, warfare, be driven from the face of the earth.

The obligation then rests on us to increase the food supply.

A special edition of Wisconsin Horticulture was mailed to every member April 18th, an appeal to members who live in villages and cities to plant gardens and to those who are skilled gardeners, either professional or amateur, to give of their time to help beginners. Before the edition was in the mails one member assured his friend that it was hysteria and no great need existed, no danger threatened our food supply. An awful responsibility rests on all who now voice this sentiment.

Altho the writer is fully conscious of the great danger that threatens us thru such indifference, he refuses to believe that any large number of our members will take this position. It is not hysteria, but only plain reasoning and common sense.

The president of our Society, true as always to the trust imposed on him, loyal as always to his community, his state and his country, has practically abandoned his own work and is spending his time helping others, in schools and public places, Oshkosh, Neenah, Milwaukee and wherever called.

Not all of us can afford to do as much, but we can all "do our bit." No one of us but can do **something.** Now is the critical time, the seeding time, a month from now will be too late.

Let each one of us then do the thing he is best fitted to do so that when peace comes, whether it be tomorrow or years hence, when the roll of honor is made up of all who labored unselfishly to the end that "liberty should not perish from the face of the earth," the name of every member of the Society shall be written there.

Plant Flowers.

Devote at least one row across the garden to flowers. Those who have grown asters alongside carrots and taught mignonette to live in peace with cabbage will need no urging.

Those who have heretofore starved their flowers in stingy flower beds or borders will be converted forever after to the garden plan.

"Let me suggest also that every one who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations."—President Wilson.

A Faithful Friend.

Belated word comes to this office of the death on January 25th, of George Jeffery, Sr.

For fifty-one years, without a break, Mr. Jeffery exhibited fruits at the state fair, thus establishing a record unequaled by any other exhibitor.

No matter how poor the season for fruit, we could always depend on Mr. Jeffery; he was always on hand, cheerful and optimistic.

He came for pure love of the game, for premiums, so far as their cash value was concerned, troubled him not at all. He loved fruits, and above all, loved to mingle with fruit growers.

The pear was his favorite fruit, and a line from the obituary notice in his home paper gives us a hint why this was so; "born in County, Kent, England." The pear is a native of there and especially popular in Kent, the garden of rural England.

He was one of us, no one else could claim him and his life and his work an inspiration.

"Mr. George Jeffery, who for the past two years has made his home with his son Charles in this village, died late Thursday evening from general debility.

Deceased was born in County Kent, England, September 29, 1827, and when a lad of twelve years came to America with his parents and settled at Lisbon, Wis. Thirty years later Mr. Jeffery moved to Wauwatosa, Wis., where he owned and operated one of the finest and most profitable horticultural farms in the country.

Mr. Jeffery was instrumental in organizing the state Agricultural society under which auspices the state fair has been held for nearly fifty years. He exhibited his fruit at the first state fair held on the Cold Spring site in Milwaukee, and at every state fair held since up to 1915 when illness compelled him to give up. During his time he exhibited more more than 500 varieties of pears, apples, plums and grapes for which he took very many attractive prizes. About two years ago he and his wife came to Dousman to reside with their son Charles.

Mr. Jeffery was an authority on fruit raising and his council on the various phases of the industry were considered valuable by the horticulturists of the state.

His work was done and well done, and the stern Reaper found him as a "sheaf of grain ripe for the harvest."

Dousman paper.

Make Use of the Spray Pumps.

A number of spraying outfits have been purchased by the different communities of Wisconsin this season in an attempt to rid the maple trees of the cottony scale. These pumps will no doubt pay for themselves in this one service alone, but that is no reason why they should not be kept working and be of still greater service to the community.

In all of the communities where spraying outfits have been used there are as many or more apple trees than maple and these trees, especially where grouped in blocks of 10 to 20 or more, could be made to yield handsome returns if properly cared for.

At present the apples coming from these trees are largely scabby or wormy, or both, and of a very low grade and will keep for only a short time. With a small amount of spraying, which need not cost over a few cents per bushel, the apples could be changed into clean, sound fruit.

In order to do this it is absolutely necessary to apply two sprays in the spring of the year. One is called the "pink bud spray" from the time it is put on —when the blossoms are just showing pink—and the other, the calyx spray, which is put on as soon as possible after the blossoms fall.

These communities should arrange to have their pumps in use during this period. The State Department of Agriculture or the State Horticultural Society will be glad to furnish detailed directions for making up the proper sprays and furnish suggestions for equipping the outfit and applying the spray. The State University will have a bulletin on the subject ready before time to spray.

In this way the spraying outfits can be of double benefit to the community and will materially increase the food supply as well as bring profit to the owners of the orchards.

No Vine Crops in Small Plots.

It does not pay to grow the vine crops in very small gardens unless they can be trained on trellises at the side of the garden or planted on the area which has matured an early crop like lettuce, early peas, spinach, or radishes.

The vine crops are all warm season crops and cannot be planted in the field usually before June 1st. The growing season is so short that only the earlier varieties of muskmelons and watermelons can be matured from seed started outdoors. Cucumbers and squash usually mature if started the first week in June, but even they should be started in the hotbed if an early product and a large yield are desired.

Starting Vine Crop Seeds.

The seeds may be started about April 25th in berry boxes, four-inch paper pots or on four-inch squares of sod. From four to six seeds are planted in each box. The hotbed should be kept warm as the vine crops do best at a temperature ranging from 75–85. Thorough ventilation is necessary. Care must also be taken to water frequently enough to prevent the soil from drying out or the leaves from wilting.

The plants are hardened by exposing them to outdoor conditions and withholding water for five or six days before they are set in the garden.

In setting the plant, dig the hole and place the plant in it, drawing the soil around the plant, being careful not to disturb the roots. If the plants are grown in a berry box, it should be removed before planting.

The training of vine crops differs from tomatoes in that the axillaries are nipped off beyond the second node instead of being removed altogether. The fruit is borne in the first node of the axillary shoot. With cucumbers this method of pruning is continued as long as they bear fruit, but with muskmelons all the growing tips are pinched off after the plant has made a growth of five feet and set two or three fruits.

Vine Crops Seldom Cross.

Many gardeners are afraid to plant muskmelons and cucumbers together for fear of their crossing. These two crops never cross, and if poor quality melons are obtained, this condition must be ascribed to improper cultural conditions, poor seed, or the attacks of disease or insects. Varieties of cucumbers or of muskmelons cross readily among themselves, but never with each other. Neither do either of these crops cross with watermelons, squash or pumpkins. Winter squash and pumpkins will not cross, but summer squash and pumpkins may cross.

Varieties for the Home Garden.

Beware of using "Wonder Plants," with promise lithographic,
For hauling in the yields from such Never blocked the traffic.

Quality should be the first consideration in selecting varieties for the home garden. Only those varieties possessing high quality should be grown. Adaptability is also of prime importance. It is useless to attempt to grow some varieties at certain times because they are unable to stand the unfavorable conditions to which they are subjected. Thus the selection of a high quality wrinkled pea for the earliest crop would result in failure, as it could not withstand the unfavorable conditions.

Use the Old Stand-by Kinds.

Confine your selection largely to standard sorts. We are often tempted by the glowing description in the seed catalogue to discard a variety which has been entirely satisfactory for a new and untried one. Better depend largely upon the tried variety and plant the new one sparingly until you have established its worth for your conditions. One cannot afford to risk the loss of a crop merely to satisfy his curiosity.

Work With Tomatoes.

The home gardener should start his tomatoes about the middle of March for the early crop. After they get their first leaves, they should be transplanted into two-inch paper boxes and later into four-inch paper boxes. They may be set into the gardens as soon as all danger of frost is over and the ground is warm. A succession of tomatoes may be provided by planting an early and a late such as Bonny Best and Stone at the same time, or by making two plantings of the early variety, three or four weeks apart.

The yield in the home garden may be greatly increased by staking the tomatoes. The vines are trained to two stems by cutting out all the axillary shoots except the first one which is allowed to grow. They are tied with raffia to a five-foot stake.

(Continued on P. 140)

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

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INSECTICIDES AND FUNGICIDES

Lime Sulphur

Arsenate of Lead
Dry and Paste Form

Bordeaux Mixture **Nicotine Solution**

Kerosene Emulsion, Etc.

CREAM CITY CHEMICAL WORKS

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WRITE FOR CIRCULARS AND INFORMATION

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Training Tomatoes.

(Continued from P. 138)

When the vines reach the top, they are cut off. The advantages of staking are that twice as many plants can be set on the same area so that the yield is materially increased and the fruit is much cleaner and ripens earlier.

TRAINING AND PRUNING HELPS.

Tomatoes are sometimes trained on a trellis made of slats, or on a wire fence or even on wires stretched between two posts set at the ends of the row. The tomatoes may or may not be pruned, but it usually is advisable to cut off the excess vegetable growth, especially where the ground is rich. This will force most of the growth into the fruit.

How I Made Apples Pay.

Six years ago an orchard came into my hands along with a good spraying outfit. 500 apple trees were bearing well, but middle men got the fruit, or had been getting it, at a very small price and the spraying outfit had not as yet been used.

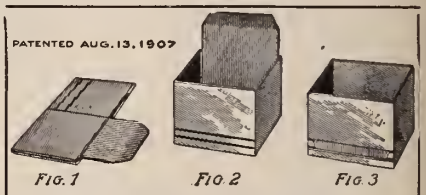
I was a poor man and needed a fair price for my produce. But the produce must be made to equal the prices wanted. To this end the spray was applied thoroughly, and the results the first year were very satisfactory. My entire crop of 700 bushels was sold direct to consumer either by peddling or shipment. The next year I found the apples to be almost absolutely free from worms. So to get more and better customers and a little better prices the buyers were offered 2 cts. a piece for every worm found in a bushel. Well, the idea worked splendidly and many people leaned to know the value of good clean, wormfree fruit. Surely the way to make an orchard pay big is first, of course, to make it produce good fruit and second, to place this product before people that appreciate it.

H. P. Anderson.

J. E. Baer.

A message from Baraboo just at this edition goes to press announces the death of J. E. Baer of that place.

Mention of Mr. Baer's services to horticulture in Wisconsin will appear in a later issue.



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Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

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TRADE MARK
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SPRAY PRODUCTS

Arsenate of Lead

Paste or Powder
Lime Sulphur Solution

Recognized as standard in principal fruit growing sections of the country. Convenient source of supply for Wisconsin fruit growers. Sulphate of Nicotine 40% and free Nicotine 40%. For further information write

The Grasselli Chemical Co.
Established 1839
Main Office, Cleveland, Ohio
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JEWELL MINNESOTA GROWN
Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

McKAY NURSERY COMPANY
PARDEEVILLE, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

"We have a Fine Lot of Plants for the Garden"

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J. E. MATHEWSON
SHEBOYGAN, WISCONSIN

Quality Stock
Strawberries
Native Plum Small Fruits
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WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year
Kellogg's Nurseries
Box 77, Janesville, Wis.

Bound Volumes Wisconsin Horticulture.

Twenty-five sets of Wisconsin Horticulture and index, complete from September, 1910, to August, 1916, inclusive, have been bound in two volumes, heavy board with leather back and corners.

Twenty of these sets are offered for sale, to members only, at $2.50 a set, purchaser to pay carriage. This is less than cost of binding and index.

Postage on the set amounts to 13 cents for the first 2 zones (150 miles) and 22 cents for the 3rd zone, which includes all points in Wisconsin.

The following are good dahlias: Queen Wilhelmina, Snowclad, Sunshine, Cuban Giant, Grand Duke Alexis, W. W. Rawson, Delice, Jack Rose, Mina Burgle, Kriemhilde, Golden Gate.

A Good Garden Bulletin.

The Home Vegetable Garden, Farmers' Bulletin No. 255, U. S. Department of Agriculture. Free for the asking.

Three Good Garden Books.

For the amateur who wants the **how** rather than the **why** and wants it right away, Vegetable Gardening by Greene, the Webb Pub. Co., St. Paul, will prove a source of great comfort.

How to Grow Vegetables, French, the Macmillan Co., and Productive Vegetable Growing, Lloyd, cover both principles and practice.

No Poultry Department.

The full page reproduction of the poultry poster is by way of co-operating with the Agricultural College, to circulate more fully a most excellent plan for increasing food supply. It does not mean a permanent poultry department.

Help Offered.

Communities desiring garden help are requested to notify this office. A practical gardener will be sent on petition of ten or more persons at the expense of the W. S. H. S., who will visit gardens for half a day and meet the gardeners in the evening to answer questions. This may prove to be a big contract, but we will do our best to fill it.

Good annuals for cut flowers are marigolds, sweet peas, calliopsis, asters, scabiosa, petunias, snapdragons, nasturtiums, and zinnias.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

A Dozen Different Dahlias For A Dollar, Post-paid

All good popular varieties. A collection that will please you. Strong "toes" or divisions. Order at once before you forget. A dollar will do it.

WILLIAM TOOLE & SON

Garry-nee Dule ∴ Baraboo, Wis.

The Kickapoo Valley WISCONSIN'S FAVORED FRUIT DISTRICT

Our Speciaty: Planting and developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

THE KICKAPOO DEVELOPMENT COMPANY
GAYS MILLS, WISCONSIN

Ask Questions.

Amateurs are implored to ask questions. No matter how simple or how complex the problem may be, come forward with it. A personal reply is assured in every case. This service is rendered to all, without money and without price.

The following hardy plants make good cut flowers, coreopsis, hardy chrysanthemums, delphiniums. Spanish and German iris, lupine, peonies, phlox, golden glow, sweet william, gaillardias.

D

"CANNOT BE BEAT
IN WAUSHARA COUNTY"

180 acres good sand loam adapted for potatoes, corn clover and rye, beautiful trout stream flowing through pasture land; about 20 acres timber.

Orchard and Home 500 apple trees in their primes, worth $2000. Buildings worth $3000 excellent location.

This property is a money making bargain to someone who likes to handle apples. Price $45.00 per acre.

APPLE FRUIT FARM
Pine River, Wis.

Cut out the old dead wood of the currants and thin out new shoots if they are thick. Leave no more than can have plenty of room to grow.

Emergency Postar 4 April, 1917

HELP SUPPLY YOUR OWN TABLE

Mr. Town "Lotter"!—

Your country calls you to help. We face a very serious food shortage. In the emergency, your garden space, your muscles, and your spare time must be enlisted.

President Wilson says: "Everyone who cultivates a garden helps and helps greatly to solve the problem of feeding the nation!"

Remember, somebody has to raise everything you eat. A garden in your back yard, though small, will surprise you by the amount of vegetables it will produce. A lot of patriotic folks are going to have a garden this summer. Why don't you have one, too? There's plenty of time if you will *start right now.* Let the boys and girls have a hand in it. Here is a plan you can follow — with success.

Plan First Before You Plant

Hit or miss gardening wastes time and energy and does not yield good results; so plan your garden carefully.

Remember, winter vegetables will count most this year. Grow the small, early maturing crops between the rows of winter vegetables.

GET THE GROUND IN GOOD SHAPE. — (1) Apply fine or well-rotted stable manure if you can get it. (2) Plow or spade from 7 to 8 inches deep. (3) Rake until thoroughly pulverized and leave level and smooth.

WHEN TO PLANT.—Sow seed for late tomato plants indoors at once. Later, you may be able to buy plants from your grocer.

Plant early beets, early carrots, lettuce, onions (seed and sets), peas, radishes, and early turnips as soon as you get the garden ready.

Plant late beets, carrots, parsnips, salsify, and seed for late cabbage plants about May 1-5.

Plant beans, corn, cucumbers, squash, tomatoes after frost damage is past.

Set late cabbage the last of June.

Sow turnips and winter radishes late in July on all ground used for early maturing vegetables.

Lettuce, peas, radishes, beans, and corn may be planted at two weeks intervals to ensure a constant supply.

SOME OTHER THINGS TO REMEMBER.—The best crops to plant for a winter supply are: beets, cabbage, carrots, celery, onions, parsnips, rutabagas, turnips, and tomatoes. Suggestions will be made later on storing and preserving these.

Unless you have a large garden, don't waste your space by growing potatoes, corn, squash, and other vine crops.

Plant seed of standard varieties—don't experiment with new varieties this year.

After the Garden Is Planted

—your work has just started. Stay by it and you will find it both profitable and enjoyable. Have appetizing fresh vegetables on the table during summer, home-canned vegetables on the shelf and others in storage in the cellar. Don't let the hot weather wilt your patriotism.

USE THE HOE to keep the surface soil loose and fine. Hoe shallow —the roots are near the surface. Hoe after each rain and at least once a week. Be sure to wait until the soil is dry enough before hoeing—this prevents lumps. Frequent hoeing kills the weeds before they get above ground.

Plan right now to can or store surplus vegetables.

"More Food This Year Is Patriotism"

If you want to know more about gardens ask your neighbor who has had one or write

Agricultural Experiment Station, The University of Wisconsin
Madison

"The hoe in the back yard is mighty good backing for the flag on the front porch"

Emergency Poster 3 April, 1917

An Army of Poultry Will Help Win the War

Uncle Sam Says:

"The Nation's meat supply is short.
"Chickens are the quickest meat crop that can be produced.
"Chickens require no large cash outlay.
"We need an increase of one hundred million pounds of poultry this year.
"Wisconsin's share is three and a half million pounds.
"Will you raise a bigger flock?"

Raise More Chickens — It Pays and It's Patriotic

But the big waste in poultry comes through losses after the chicks are hatched. It is a crime against the Nation's meat supply to let a chick die that has eaten some of the farmer's feed and used up some of his energy. Save your chicks.

Right now before you go home

Buy a can of insect powder—be sure it's fresh — and some vaseline.

Have you any coal tar disinfectant?

And how about a good egg crate so you can market your eggs without waste?

Unless you have a supply of buttermilk or sour milk, stop and get a sack of meat scrap.

Tonight when you get home

Let the boys do your chores while you grease the heads of the baby chicks, and dust the setting hens with that insect powder.

Then tomorrow, clean the coop and paint the roosts with kerosene or coal tar disinfectant. That will kill the mites.

Why not market or eat the poor laying hens and all but a very few roosters?

You can tell your poor layers. They molt in the summer (good ones molt in the fall). They sit on the roost late in the morning and early at night. Feel their crops at night—good layers are good feeders. Sell all small, long-headed, late-hatched pullets.

Feed some buttermilk, sour milk, or meat scraps.

Give them free range — but fence in the garden.

Feed regularly a variety of good, clean feed.

Keep a dry mash before the hens at all times.

Use 2 pounds of ground feed, 1 pound bran, 1 pound middlings, and one pound of meat scrap if milk is not available.

Provide plenty of house room for the growing chicks.

Sell or shut up all roosters after May 15. The rooster makes eggs fertile—fertile eggs spoil.

Have the boys provide a clean, well-littered nest for every five hens.

That will prevent dirty and broken eggs. Have them gather the eggs twice daily, and pack them in that egg crate in a cool, dry cellar or milk room.

Market them at least once a week. Don't let the sun hit them on the way to market.

Town Folks—Start a Flock!

Keep a dozen hens in the back yard.

Feed them your table scraps, your lawn clippings, and garden waste.

Read all the good advice you can get.

Write to the College of Agriculture, Madison. They will be glad to help you.

Of course this means a little extra work, but eggs and poultry are going to be high

"More Food This Year Is Patriotism"

Any questions you care to ask will be answered by

Agricultural Experiment Station, The University of Wisconsin, Madison

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII | Madison, Wisconsin, June, 1917 | Number 10

"We are now about to accept the gage of batttle with this natural foe to liberty and shall, if necessary, spend the whole force of the nation to check and nullify its pretentions and its power. We are glad to fight thus for the ultimate peace of the world and for the liberation of its peoples the German people included; for the rights of nations great and small and the privilege of men everywhere to choose their way of life and of obedience. The world must be made safe for democracy. Its peace must be planted upon the trusted foundations of political liberty.

"We have no selfish ends to serve. We desire no conquest, no dominion. We seek no indemnities for ourselves, nor material compensation for the sacrifices we shall freely make. We are but one of the champions of the rights of mankind. We shall be satisfied when those rights have been made as secure as the faith and the freedom of the nations can make them."

—President Wilson.

Insure Garden Harvest by Liberal Use of the Hoe.

By Professor J. G. Moore.

The summer months are the critical periods in the city garden. The garden fervor of spring has worn off in the work of soil preparation and planting and the garden operations assume more and more the aspect of drudgery. Although the gardener may feel less like hoeing and raking than he did earlier in the season, he must give the plants more attention in these respects than earlier in the season if the harvest is to be worth while. This is the test which reveals the real gardener.

We might designate this period as the "Three T" period of gardening—the thorough, timely, tillage period. The gardener's motto at this time should be "Catch moisture—hold moisture." The demand of the plants for moisture as the warmer weather comes on is ever increasing. Moisture is necessary for plant growth and unless there is an abundant supply available for the plant, growth ceases, the parts used for food fail to develop or are of such a nature as to be undesirable. Moisture, therefore, becomes at this time the chief concern of the gardener. Tillage is the chief dependence of the average gardener in supplying this essential of successful gardening.

Tillage is Garden Life.

Not only does the plant demand moisture, it must also have an abundance of available food. The old sayings, "Tillage is essentially manure," and "The best garden fertilizer is the hoe," are indicative of the importance of tillage in making available to the plants this requisite of growth.

Many a garden convert is caused to blackslide because of the persistent opposition of weeds. In the conflict with weeds, tillage is of prime importance. Properly used, tillage renders weeds negligible factors in gardening. It may not do so the first season under the same conditions, but unless quack grass or some weed of similar character is the offender, the conflict is a comparatively easy one. Thorough, timely tillage, then, ordinarily equals a good moisture supply, abundant available plant food, and an absence of weeds.

Till Soil Thoroughly.

What is thorough tillage as regards these important factors in insuring the harvest? It is that tillage which produces conditions best fitted to accomplish the desired results. The ideal condition for all objects is the same; the continuation of a shallow layer of soil, as nearly dust like as possible, over the entire surface. The methods of securing this ideal may be various, but the following program is well adapted to produce and maintain it. First of all the preparation tillage of the early season should have been such as to create a large moisture holding reservoir and place the soil in a fine, loose condition. The maintenance tillage will then be as follows:

Hoe or rake the area to be planted immediately preceding sowing or planting.

Hoe entire garden at least once a week if soil conditions permit.

Hoe, and if necessary, rake after each shower of sufficient extent to pack the soil.

This tillage should be shallow, for deep tillage will destroy many of the roots of the plants and would probably do more damage than good.

Till at Proper Time.

The old adage, "A stitch in time saves nine," applies admirably to garden tillage. Many gardeners pay a heavy penalty for not tilling when garden conditions are most favorable for tillage.

The best time to destroy weeds is just as the young plants appear above the surface. Tillage at this time will save much hard work in eradicating weeds later on.

The best time to restore the soil mulch is after a rain, before the surface soil becomes baked. A few hours delay after the soil is fit for working often means from three to four times as much work to restore the soil mulch and often a much less effective mulch than had the work been done on time.

Tillage may be untimely by being done too soon after a rain. This is particularly true on the heavier types of soil. A heavy soil worked wet cements or puddles and then bakes, destroying its tilth and making it very difficult or impossible to re-establish a good soil mulch. Timeliness, then, on such soils means tilling neither too soon nor delaying tillage too long. The following test will prove advantageous in determining whether the soil is in condition for tillage. Take a handful of soil and squeeze it firmly. If, upon opening the hand, the soil falls apart upon little or no disturbance, then tillage is safe. If the particles adhere tenaciously, it is best to let it dry before tilling.

Set Plants Right.

The most important factor in setting plants is to get the soil in contact with the roots of the plant. Very often the plant when set with a trowel is "choked," that is, the soil is pressed around the collar of the plant while the roots are suspended in the hole. It is impossible for the roots to come in contact with the soil when in this position, and the plant withers and dies.

Cucumbers, melons, and squash, which are to be transplanted, should be grown in paper pots or flower pots so that the ball of earth around the roots is not disturbed in transplanting. Plants are ordinarily set a little deeper than they were in the seed bed. Overgrown or spindly tomato plants may be set in a slanting position in a trench three or four inches deep. A plant set in this way will form roots along the buried stem.

Uses for the Garden Rake.

With a good soil and proper hoeing, the rake may be dispensed with except in the preparation tillage. Most people use the rake to level improperly hoed soil. In maintenance tillage, the chief value of the rake lies in its use as a substitute for the hoe when the rows are far enough apart to permit of its use. It is used with a slight chopping motion and saves time when comparatively large areas are to be tilled. Our choice is the old-styled straight rake with straight teeth.

Tools for Tillage.

The hoe and rake are the chief tillage implements in the average city garden. In fact, no other tools are necessary for maintenance tillage if these two are of the proper kind and properly used.

More than half the garden hoeing is less than half done. This is because most amateur gardeners do not know how to use a hoe as a tillage implement. The aim in hoeing should be to leave the entire surface fine, loose, and level. Hoeing usually falls shortof this aim for one or more of the following reasons.

DON'T "CUT AND COVER."

First we notice in faulty hoeing the cut and cover method. This consists in inserting the hoe into the soil and pulling a quantity of soil on top of an unhoed area. The operation is repeated leaving a series of hills and hollows with only approximately one-half of the original surface soil stirred. This must be followed by raking and even then is far from efficient. The only thing in its favor is that it is a rapid method, but we should have higher ideals than mere rapidity in our garden work, if we are to insure the best harvest.

The second reason why we fail to secure best results is because we leave the row strip too wide, thus permitting the loss of a large amount of moisture and leaving an opportunity for weeds to develop in direct competition with the vegetables. This failure is usually due to unsuitable hoes. Most hoes are too large and are so constructed as to make work between plants, set at small distances, almost impossible. The long-handled, three-cornered hoe frequently called the onion hoe," will largely eliminate this difficulty.

Loosen the Surface Soil.

We hoe to preserve a layer of loose soil on the surface, yet in looking at many recently hoed gardens, you would never mistrust that this was the chief object. The gardener, due to faulty methods, has succeeded in largely repacking the soil by tramping over the area he has just hoed, and not infrequently, his labor is worse than wasted as he has less favorable conditions when he has finished than before he began. A good mark at which to aim in this regard is to have no footprints visible when the hoeing is finished. If you set out with this in mind, you will quickly devise ways of accomplishing your purpose, and that without loss of time or efficiency. Of course, this mark cannot be reached where the wheel hoe or horse cultivator is used.

Hoeing properly done, then: (1) stirs all the soil possible; (2) leaves the soil fine and level; (3) avoids repacking the soil by tramping.

The small hoe is preferable to the large hoe in a number of ways. Some of the reasons are that it is easier to operate; can be used closer to plants; if soil is somewhat compact, a much better job can be done, and at less expenditure of energy. Nine-tenths of the hoeing in the city garden can be done efficiently with the long-handled, three-cornered hoe previously mentioned. Avoid round-backed and very large-bladed hoes.

Do not prune spring-flowering shrubs until after they flower. Those that flower in autumn may be pruned now.

HOW I CAN MAKE MY GARDEN PRODUCE FOR WINTER USE.

Miss Blanchard Harper Madison, Wis.

(From 1909 Annual Report)

Mr. Cranefield has asked me to tell you how I can my garden produce for winter use, and I am willing to do so in order that the pleasure the results of my efforts have given to me and my friends may also be yours. I need not say pleasure only but should lay some stress on the profit also as may be shown in the one fact that Mrs. Geo. N. Knapp whose husband was formerly a professor in the College of Agriculture, made eighty dollars the first year she accepted any orders and the second year refused further orders when those received amounted to three hundred dollars. I have more than once been offered four dollars per dozen pints of canned peas, and cost of cans extra.

Any one who has had peas, corn, string beans, etc., canned at home will not willingly go back to factory goods. The flavor is exactly that of the fresh vegetable, and there is absolute certainty of purity.

Please bear in mind that I in no way claim to be the originator of the following recipes. Some of them are taken directly from Mrs. Rorer's *New* Cook Book and the ones for the corn were worked out by my friend, Mrs. G. N. Knapp. In some cases I have changed or adapted a recipe, but in all cases, I shall as far as possible credit the originator.

Before giving the recipes, it will be necessary to consider a few preliminary preparations and to mention several cautionary *"dont's"* to the unwary housekeeper. The preliminary care for canning vegetables must begin in the picking and handling in the garden, and the necessary directions will be given with the recipes—but the preparations in the kitchen are the same for all and can be given here.

This kind of canning is merely sterilizing food stored in sealed jars, and once the contents have been thoroughly sterilized there is no liklihood of spoiling for several years if the sealing is intact, except under one condition and that condition is so important, so underrated, so generally ignored that I can hardly place too great a stress upon it—and that is *clean jars*, chemically clean jars. How many times do women canning use a jar stained by previous contents, or a mason jar cover roughened and whitened and corroded inside, by the fruit acids of last year's canning, how many stop to consider the possible chemical combinations and deposits made by the action of fruit juices on the metal under that innocent looking opal disc in the cover of the Mason jars. A woman will do every stage of the process carefully and well, then after all her efforts put on a contaminated and corroded cover, ignoring the fact that in so doing she is merely adding unknown lead and zinc salts to her fruits, then wonders why they taste queer. On that account I prefer to use glass topped jars. There are a number of different makes on the market, as nearly every manufacturer of Mason jars also makes the glass topped. The first cost of the latter is more than Masons but when balanced by corroded covers which must be renewed and spoiled cans, it comes out even about the second year. Never use a jar or cover that is stained. If hot soap suds does not remove the stain, soak the jar for 24 hours in strong solution of washing soda, if that fails use commercial hydrochloric acid one part, water two parts (can be used over and over again) or try sapolio, bon ami or dutch cleanser—and if all these fail use the jar for pickles or throw it away.

Never use a rubber ring a second time. Buy the best you can get. They should be soft, flexible, not too thick, and should not stretch in the boiling.

Never touch or handle the cover or rubber on a *sealed* jar. The steamed juices in cooling form a delicate cement between the cover and rubber, and this, if broken by turning or handling is liable to start a leak and admit air. Always lift a jar by the jar itself, never by the cover. Keep your jars in a cool, dry, dark place after canning.

Provide the following utensils: (1) A boiler or kettle with flat bottom and with a close cover. The kettle should be deep enough to take pint or quart jars and yet leave an inch of space above them. An ordinary tin wash boiler such as is used for clothes is the best when a number of jars are to be done—but when I have only one or two I use a soup kettle.

(2) Provide a piece of expanded metal lath, or galvanized wire netting having ½ or 1 inch mesh, cut to fit the bottom of the boiler. Or have a wooden rack made to fit the boiler. Either should lie flat. The object is to lift the jars from the bottom of the boiler to prevent them from bumping when the water boils hard.

(3) Plenty of new good rubbers.

(4) One or two extra jars for emergencies.

(5) Boil one or two gallons of water for ten or fifteen minutes after it comes to a boil. Cover it while cooling and keep it covered until used as shown later. The objects in boiling the water are threefold: (1) To sterilize; (2) To expel the air absorbed in it; (3) To throw down the lime if the water is hard.

With clean jars, rubbers, covers, and the above utensils one is ready to try the first vegetable.

Peas.

As the variety of peas grown makes a great difference in the result, I will state that my friend Mrs. Knapp tried canning "Telephone" peas and found them so unsatisfactory that she said "One would not know them for the same vegetable as yours." I always use the following varieties: Little Gem, Premium Gem and Advancer. Nott's Excelsior were not bad. Gradus I did not care for.

It is labor lost to can old peas. Peas for canning are better picked when *best* for the table but better too small than too large.

As peas ripen the development of starch makes them difficult to keep when canned. Canning also emphasizes any tendency they may have to a mealy flavor. Peas should be picked in the early morning, when they are cool. If the pods are dirty or the pickers of questionable cleanliness, *wash the pods before shelling.*

Fill a pint jar half full of the sterilized water, (if the water is put in first air is not imprisoned in the space between the peas, to cause trouble in boiling.) With clean hands shell the peas directly into the jar until it is full. Add ½ teaspoon of salt. Lay on carefully washed rubbed ring, then the cover *loosely* fastened. When all jars are ready place them in the boiler on the wire or wooden rack. Now pour in cold water until it comes to two-thirds the height of the jars, cover and put the boiler on the stove and boil two and a half hours from the time the water boils. Quarts should boil three hours. As soon as the period is up turn the fire out and *without delay* as quickly as possible lift the jars out one at a time and tighten the cover before lifting another to tighten. One bushel of peas makes 10—12 pint jars.

Never, never, never, lift a cover off the jar, as that would admit infection of moulds and ferments. Let me repeat again *do not delay* in tightening or sealing covers as soon as the water ceases to boil; if you do you can in a few minutes hear fresh unsterilized air carrying all sorts of germs of moulds and ferments sucking into your jar to ruin your work. I consider this and the question of clean jars and covers and good rings the crucial points of the whole process. Everything depends on them. Adapted from Mrs. Rorer.

Asparagus.

I have never myself canned asparagus, but give herewith Mrs. Rorer's recipe for those who care to try.

Wash and trim the asparagus. Cover it with boiling water, boil fifteen minutes, drain, cool, and arrange it neatly, heads up, in wide mouthed jars; adjust the rubbers, fill the jars to overflowing with water that has been boiled and cooled; add a half teaspoonful of salt and lay on the tops loosely. Cook the jars in the boiler one and one-half hours as directed for peas and finish in the same way.

Beans.

String beans should be picked before the dew falls in the evening or after it is dry in the morning, and kept in a cool place covered with a cloth or wet paper to keep them crisp. Mrs. Knapp and I have used the Stringless Green Pod, and the 1000—1 Refugee with the best satisfaction. I tried some wax beans one year but found them flavorless and unsatisfactory. String and cut the beans as for the table, throwing them into cold water as they are cut, drain them and throw them into boiling water to cook until they can be pierced by a silver fork without breaking and they must cook no longer. If they are cooked too long at this stage they become soft and mushy in the cans. Remove from fire, drain immediately and pour cold water through them in a colander until they are *cool and firm.* If one has not a faucet or pump, three or four changes of water will be sufficient. Use plenty of water. This cooling is called blanching by some writers.

Half fill the jars with the sterilized water, then put in the beans which have been thoroughly drained and pack them in as firmly as one can without crushing, add one-half teaspoon of salt. Finish as directed for peas cooking one and a half hours.

Young and tender beans require little more than scalding in the preliminary or first cooking, but old beans require sometimes fifteen or twenty minutes according to toughness and quantity. It is advisable on this account not to cook more than four or six quarts at a time for the preliminary cooking. Shelled Lima beans are done in the same way. Adapted from various sources.

Beets.

Young beets may be canned either whole or sliced, and with or without vinegar.

Mrs. Rorer's Recipe.

"Select young fresh beets; wash, put them into boiling water and boil carefully for thirty minutes; then remove the skins, and pack the beets into quart jars. Add a half pint of vinegar to a quart of water that has been boiled and cooled; fill the jars with this mixture. Finish as directed for peas, cooking forty-five minutes."

After cooking the beets thirty or more minutes, I rub off the skins, slice the beets, run cold water through them, then half fill the jars with sterilized water, then put in the chilled beets and finish as directed after adding half a teaspoon of salt. They should boil an hour in the boiler. I have also canned young carrots and spinach in this way. The carrots were successful but as carrots can be so easily stored in the cellar in sand, it is not necessary to can them. One can out of several that I did of spinach was successful. I am inclined to think that the others would also have been had I canned them in the orthodox way, but I tried cooking them in the hay box instead of the boiler and so failed.

Corn.

Many years ago Mrs. Knapp saw a paragraph in the Breeders' Gazette telling some woman's experience in canning corn. On that foundation she has since worked up the process hereafter given.

The paragraph mentioned particularly the fact that the corn must be gathered at such an hour of the day that there should be no moisture upon the husks from rain or dew, that after gathering the corn must be spread out separately to avoid all danger of heating or sweating by piling in heaps.

The other details of manipulation are Mrs. Knapp's.

As said before the corn must be dry when gathered, the weather must not be damp, rainy or cloudy. Mrs. Knapp would sometimes gather her corn when a thunder shower threatened, but never after. The canning must be done only on clear pleasant days— never on a rainy day—why we do not know, but corn canned on a rainy day is more liable to spoil.

After gathering the corn should either be used immediately or spread out on the floor of porch, shed, or cellar. It should be husked and the silk brushed off with such a brush as is usually used to wash vegetables. After brushing the corn is cut from the cob with a sharp knife, not too close, and then the cob scraped down to get out the milk and pulp still adhering. As soon as enough corn is cut to fill a pint jar it should be immediately put in the jar and packed down firmly with a spoon or better still a stick just wide enough to go through the mouth of the jar easily and shaped something like a potato masher.

The jar should not be filled above the shoulder to allow for expansion by heat of cooking. Mrs. Knapp adds no salt. I use ½ teaspoonful to each pint. As fast as filled each jar should be loosely covered and set in cold water to keep cool until all are ready for the boiler.

Do not put on rubbers at this stage.

When all the jars are ready put the grating or rack in the boiler, fill with cold water to two-thirds the height of the jar and boil for two hours after it begins to boil. If during the boiling any of the jars boil over they must now be wiped clean. The rubbers are now adjusted making sure that no particle of corn be between them and the glass or the cover, and the cover must be fastened tight. The jars are then replaced in the boiler and enough hot water added to completely cover them. They must boil for one and a half hours longer after coming to a boil. The jars must not be taken out until thoroughly cool. Wipe the jars clean immediately as the scum is difficult to remove when once dried. The expansion of the corn in cooking varies greatly in the different varieties of corn and also the age. And this expansion is to be guarded against because it sometimes blows the covers off. No water must be allowed to enter the jars. By tight or firm packing and so excluding the air from between the kernels, the expansion seems to be lessened; but an even more important factor seems to be the prevention of fermentation previous to cooking by working quickly and without interruption from the husking until the corn is in the jars and then keeping the jars standing in cold water.

There is another way of doing corn when it is to be used for cream soup, fritters and pudding, to score each row of kernels and then scrape out the pulp with a knife leaving the hulls on the cob; or this may be done more rapidly by a corn-scorer, which can be purchased for fifteen cents.

This pulp should be handled even more rapidly than the cut corn. The jars owing to the great expansion which takes place in cooking, should be *only half filled.* It is im-

possible to cook it and have a jar more than half full when finished; hence it is more economical, cleaner and less aggravating to start with a jar half filled and get it all. It is cooked exactly as in the first recipe. Corn put up according to these recipes is delicious and well worth the effort.

Frequently in cooking the jars I myself do not follow Mrs. Knapp's method of tightening the covers and adding hot water to cover at the end of two hours; I cook the jars two hours, wipe them clean, adjust the rubbers, lay on the covers loosely, and cook for the additional hour and a half, then close at the end of the time. But I must admit that my way is not as safe and sure as Mrs. Knapp's although I have never failed in it.

Mrs. Knapp and I have tried the following varieties: Early Crosby, Melrose, Portland, Stowell's Evergreen, Zig Zag Evergreen and Country Gentleman. They are all delicious—but the Early Crosby and the Zig Zag Evergreen seem to stand the canning better. Corn for canning should be picked when best for the table. Old corn like old peas is difficult to keep.

As a rule from 5 to 7 ears are required for a pint of cut corn, although we have used sometimes as many as ten and as few as four. It all depends on the corn.

Tomatoes.

Tomatoes form an important element of modern cookery, taking their place as vegetable, salad, soups, purees and sauces for meats, macaroni, etc.

The method of cooking I use in putting them up belongs to Mrs. Rorer's recipes, but the flavoring and many other details are my own. "Adapted partly from Mrs. Rorer" I think should be the label on the following recipes. Use only good, solid, fleshy tomatoes.

Stewed Tomatoes.

Select tomatoes carefully, scald by dipping for a minute or two in boiling water to loosen skin, skin, and divide the tomatoes if very large. Put them in a porcelain lined kettle, and add enough onion juice or chopped onion to taste. I use one small onion to two gallons of tomato, and a half teaspoon of celery seed, eight or ten peppercorns and a tablespoon of salt. Boil until the tomatoes are as thick as are usually served on the table, then pour them into clean jars, put on the rings and cover loosely. Set the jars in the boiler, and fill to two thirds height of jars with water about the temperature of the jars of tomatoes, warm if they are warm, cold if they are not. Bring to a boil and boil ten minutes. Remove at once from boiler and tighten covers.

Tomato Puree for Soups and Sauces.

Cut up sound tomatoes and boil in an enamel or porcelain kettle until thoroughly soft. Strain and mash through a colander, then through a fine sieve. Return to the kettle and add for two gallons of tomatoes the following: 1 tablespoon salt, 12 peppercorns, ½ teaspoon celery seed, 1 small onion chopped, 2 bay leaves, 6 cloves, 6 allspice, 1 bunch parsley. Cook slowly until tomatoes are thick, then turn into jars and finish as in preceding recipe.

To use these tomatoes:

For soup: Add an equal quantity of soup stock, enough butter and flour to thicken and a few drops, if one likes it, of kitchen bouquet.

For tomato bisque: Add a salt spoon of soda to the tomato heated then an equal quantity of hot milk, thickened with butter and flour and serve immediately.

For a sauce for chops, cutlets, fish, etc.: Merely heat tomatoes and thicken with browned flour and butter. A little left over gravy or soup stock may also be added with advantage.

Tomatoes Whole for Salad.

Carefully select tomatoes of globular shape which will just slip through the mouth of the jar. Scald and skin them as directed for stewed tomatoes, take out the stem and core and slip the tomatoes gently into jar. Mrs. Rorer adds merely the sterilized water and a little salt but I add the following liquid.

The day before I stew a small quantity of tomatoes until soft and then set the kettle aside to cool and settle. The following morning I carefully pour off all the clear liquid floating on the top, strain it through a jelly bag, and boil it for a few minutes with onion, bay leaves, celery seed, pepper-corns and parsley, then cool it and use it to fill the jars of whole tomatoes.

The jars are covered with rubbers adjusted and placed in the boiler with cold water. Bring to a boil and boil ten to twelve minutes only. Remove immediately from the boiler. When wanted to serve, drain off the juice, thicken with gelatine and use it to imbed the tomatoes either single or together.

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Frederic Cranefield,
Sec. W. S. H. S.

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Hold!

The great Spring Drive started by the Agricultural College and other state institutions and continued by the newspapers of the state has been successful. Not only the larger towns, such as Milwaukee, Superior, Oshkosh and Sheboygan but hundreds of smaller places have been captured and the inhabitants all inoculated with the garden germ. Travel where you will in the state you may see gardens innumerable where no gardens ever grew before. And it's a mighty good thing. Even if the war should end tomorrow and if the food supply, on account of an abundant harvest, should be superabundant, two things highly improbable there would still be great gain.

Several things will be gained, health and vigor for many city gardeners, a love of gardening that will not end with the war and, on the part of many, a greater respect for the farmer and gardener, for the man or woman who this year for the first time raises a bushel of potatoes or of tomatoes will know what it costs to produce them.

Also the money value of all these thousands of gardens will be tremendous, if, and here comes the rub, if we all HOLD FAST! This is the first battle for many and some will drop their weapons and run. Digging and sowing the seed is not unlike marching down the street behind the band but getting into the trenches is another matter.

That's where you will be during June, July and August, dear brethern, in the trenches. Let's see if you've got grit enough to stick. Your enemies will attack day and night, week-day and Sunday, rusts, blight, bugs, worms, drought and storm. Yet every one of them can be overcome if you Hold Fast.

Call it war and you have it about right, we won't change the figure but somehow when I think of you beginners hammering at some hard and unkindly soil with a dull hoe, the thermometer at 80 or 90 and not a cloud in the sky I like to think of the big Chicago-Wisconsin foot-ball game at Camp Randall last October.

The home team had been getting rather the worst of it, forced back inch by inch but fighhting bravely all the way; all the way back across the ten yard line, back again over the five yard line they are now scarce a foot from the goal and the ball on the opponents side. There they stand or crouch, tense, every nerve strained, every muscle taut, waiting for the signal that will start the opponent's rush across their goal,—unless! Then from the ten thousand spectators came a cry, not the college yell, not a mere shout but just a single word, at first almost like a dirge but with each repetition swelling louder and louder, one word, hold, hold, h-o-l-d, and they *did* hold the line, Will you?

Summer Meeting.

The summer meeting will be held in Oshkosh Aug. 22–23.

Some of the best market gardens in the state are located near Oshkosh and it is for this reason the meeting was located there.

This is the greatest garden year in our history, everybody is gardening and while many of the beginners may fall by the wayside many more will have acquired a love for the work that will persist.

To these converts to our ranks as well as all those who have been saved in the past the summer meeting offers a splendid opportunity.

The meeting will be unlike those of recent years in one respect, the entertainment features will be minimized and the program and demonstration emphasized.

At least one-half of the time will be spent in visiting market gardens.

If the war should happily be ended by that date we, who have done our bit, and that means every member of the Society, should gather to rejoice, each to

congratulate the other for his part. If this "day of darkness, a day of clouds and of thick darkness," still lasts then the reason for getting together is still greater, that we may plan for the year to come.

So there will be a summer meeting of two days at Oshkosh, Aug. 22nd and 23rd, and whatever course world events may take it should be well attended.

Mr. J. E. Baer.

Mr. J. E. Baer for many years a member of the Wisconsin State Horticultural Society passed away at his home in the Skillet Creek neighborhood, town of Baraboo, Tuesday April 17th.

The cause of his death was a combination of indigestion and heart disease. On the Friday previous to his death he was taken suddenly ill in the field and fell unconscious before his son Carl to whom he called could reach him. He rallied sufficiently to be able to look about the farm on Monday so the end seemed to come suddenly.

Mr. Baer will be sadly missed by his many friends for his quiet, genial, kindly companionship, and the helpful interest he took in all that stood for the betterment of the community.

Mr. Baer was born in Grupery, Switzerland, in the year 1855 and came to Sauk Co., in May 1871. After a few years he traveled some and then settled down for a time in Stanford, Ky., where he was married in 1885 to Miss Lillian Bastin. In 1890 they came to the city of Baraboo and engaged in market gardening. Mr. Baer in Switzerland had been trained to fruit growing and always had a longing for the old occupation so in 1899 purchased the farm of the present family home which is very near where was his father's farm. Mr. Baer's orchard consisted of about eight acres of apples with a considerable variety of plums, native and domestica, also some cherries, grapes and a few peach trees. While his is a farm orchard, it is, for good care, a model for amateur or professional. His fruit as shown at the state fair and Winter Meetings of the Wisconsin State Horticultural Society was always of high quality. The home garden and ornamental plantings were models of good taste and careful management.

J. E. BAER.

Besides Mrs. Baer he leaves the following children: Carl J. at home, Miss Bessie Baer a teacher at Jefferson, Miss Susan teaching in Delton, Miss Dorothy a student at Platteville Normal and Alfred a student at Delavan.

By William Toole, Sr.

Remove the blossoms from newly set strawberry plants.

Traction Sprayers.

(Answers by Dr. E. D. Ball, State Entomologist.)

(1) Question.—Can one depend on a traction sprayer to get pressure enough to keep two double nozzles going and do effective work?

Answer: No. The traction sprayer has not proven to be a success in any line of orchard work, due to the fact that there is not enough travel for the amount of spraying required. Practical horticulturists have long since abandoned these except for special services where a very small amount of spraying in long rows was required and even under these conditions the pressure furnished is not satisfactory.

(2) Question.—Can one man manage two nozzels if he has an engine to run the sprayer?

Answer: One man might handle two nozzels set on a single pole but he would not be able to do satisfactory work as the volume of the liquid handled would require excessively rapid movements of the pole which could not be accurately made. A single nozzle of the "Mistry" or Bordeaux type on the end of a 10 or 12 foot pole is all that one man can manage with efficiency and economy of liquid. If you have a power sprayer it will handle two nozzles, but these should be on separate poles and leads of hose and with a man for each nozzle. More power outfits use three men than two, another man driving the team and caring for the pump and engine. In this way the full efficiency of the outfit can be utilized.

Seedlings should have plenty of air and sunlight to keep them stocky.

The Control of Garden Pests.

By James G. Moore, College of Agriculture, University of Wisconsin.

Practically all garden crops are attacked during their development by one or more pests. These pests are ordinarily classified as disease or insects. The greater struggle on the part of the gardener usually has to be waged against insects.

Frequently the seriousness of the attack is due to neglect on the part of the gardener to follow some of the simple practices which tend to reduce the danger to the minimum. Some of the practices recommended for the truck gardener or the farmer are not available to the city gardener.

Sanitation Must be Guarded.

One of the first things for the gardener to observe is "garden sanitation." Frequently garden pests, both insect and disease are carried over on the waste material of the previous season's crop. While working refuse material into the soil is commonly recommended, one should be sure that in so doing he is not inviting trouble for next season by providing a pest to be controlled. Burn leaves and stems or other refuse if there is the least suspicion of its being a source of infestation.

Rotation of crops is one of the best methods of avoiding pests in ordinary farm operations. While it is not possible to realize as much benefit from crop rotation in the city garden, especially as regards insect pests, it is of some value in certain instances and frequently of great value as regards certain kinds of diseases.

In the case of those insects which pass the winter in the upper layer of soil fall tillage which exposes the pest to the unfavorable temperature changes and to the attacks of birds helps materially.

Another sanitation measure is the removal from the garden or immediate vicinity of weeds or other plants upon which garden insects may feed. Very frequently there would be no serious trouble from a particular insect if its presence had not been encouraged by such plants.

Plants to Trap Insects.

Trap plants, plants started in advance of the regular crop upon which the insects may collect and then be destroyed is often found to be a satisfactory method. Frequently if the first insects to appear are destroyed there is little probability of depredations later on. This is true in the case of many aphids, the squash bug, and several others.

Trapping is a useful method in some cases. Short pieces of old boards, clods, or stones are put close to the plants in order that the insect may find shelter at certain times. It is then an easy matter to destroy the insects when they have collected underneath the protector. This is a favorite method of many in controlling the squash bug.

Hand Picking Best at Times.

Hand picking is used in the case of insects which are usually not very numerous, or when the number of plants is small. This is usually the most satisfactory method with the tomato worm. It is also very helpful in the case of potato and cucumber beetles.

Stalk borers, root maggots, and bacterial wilts usually necessitate the destruction of the plant or the portion attacked. Such pests are often detected by the wilting of the plant even though it is evident that there is sufficient soil moisture. The immediate destruction reduces the possibility of a spread of the trouble to other plants or of infestation from this source the following year.

Know Before Spraying.

The majority of insect pests and plant diseases are controlled by the application of spray materials. In order to spray intelligently we must determine what the pest is; if an insect, how it takes its food, and how it is most easily destroyed. This knowledge is usually not all gained by the beginner in his first or even his second year.

An examination of the plant usually reveals the manner in which the insect takes its food. Not infrequently, however, the pests are so numerous that waiting for the action of an insecticide would result fatally and the gardener must decide whether even more direct methods may not be necessary to save the crop. This is especially true in the case of striped cucumber beetles, flea beetles, and blister beetles.

Eating and Sucking Insects.

In ordinary cases if an insect eats the foliage or exterior parts of the plant it may be controlled by poisons, as Paris Green, arsenate of lead, or hellebore. If the insect merely sucks the juice from the plant, poisons are valueless and a material which kills by coming in contact with the pest, as nicotine sulfate, or kerosene

emulsion, is necessary. On the other hand, if the attack is on the interior of the plant, removal of the part, or in the case of seed, fumigation may be necessary.

Some knowledge of various insects is necessary in order to identify some of our less common insect pests which at times are very troublesome, but descriptions of them cannot be undertaken in this article.

Below is given a list of the more common insect pests of vegetables, with methods of control and formulae for spray mixtures.

COMMON GARDEN INSECTS OF WISCONSIN

Vegetable	Insect	Stage in which damage is done	Damage	Control method
Peas	Pea aphis (louse)	All stages	Sucks juice from foliage	6
	Blister beetle	Adult	Eats foliage	2-7
Beet	Flea beetle	Adult	Eats foliage	2-7
	Leaf beetle	Adult	Eats foliage	1-2-7
	Beet aphis (louse)	All stages	Sucks juice from foliage	6
	Cabbage maggot	Larva	Base of stem and roots	8-9
Cabbage	Cabbage worms	Larva	Eats foliage	2-10-11
	Cut worms	Larva	Cut off plant	(See general)
	Cabbage (aphis)	All stages	Sucks juice from foliage	6
	Cabbage leaf miner	Larva	Mines through leaves	12
Cucumber	Cucumber beetle	Adult-larva	Eats foliage—destroys roots	2-13-14
	Squash bug	Adult-larva	Sucks juice from foliage and stems	1-13-14-15-16
	Pickle worm	Larva	Eats fruit	1-10
	Melon aphis	All stages	Sucks juice from foliage	6
	Squash vine borer	Larva	Burrows in vine	1-12
Celery	Celery caterpillar	Larva	Eats foliage	14
Corn (Sweet)	Cut worm	Larva	Cuts off stem	See general
	Corn ear worm	Larva	Eats seed on cob	2-19
Melon	Same as for cucumber			
Onion	Maggot	Larva	Burrows in bulb	No satisfactory method
Squash	Same as for cucumber			
		Larva	Burrows in roots	No satisfactory method
Radish	Maggot			
Potato	Potato beetle	Adult-larva	Eats foliage	2-7-13-14
	Potato flea beetle	Adult-larva	Eats foliage	2-7
	Blister beetle	Adult-larva	Eats foliage	2-7
	Potato stalk borer	Larva	Burrows in stem	9
Tomato	Tomato worm	Larva	Eats foliage	14
	Tomato stalk borer	Larva	Burrows in stem	9
Eggplant	Flea beetle	Adult	Eats foliage	2-7
	Potato beetle	Adult-larva	Eats foliage	2-7-14
	Cut worms	Larva	Eats foliage and base of stems	17-18
General	Leaf beetles	Adults	Eats foliage	1-2-7
	Blister beetles	Adult	Eats foliage	1-2-7
	White grubs	Larva	Eats roots and bases of stems	19

Fungus diseases—Use Bordeaux mixture both to prevent infection and spread of disease.

Methods of Control.

1. Trap plants. 2. Dust plant with air slaked lime and Paris Green or Arsenate of lead. Repeat at intervals as often as insect reappears. 3. Fumigate seed with Bisulphide of carbon before planting. 4. Soak for 1 minute in boiling water. 5. Same as 3 but as soon as harvested. 6. Kerosene emulsion or nicotine sulphate. Nicotine sulphate at times gives undesirable flavors to salad crops. 7. Bordeaux mixture containing arsenate of lead or Paris Green. 8. Protect plant by tarred paper protector about 3 inches in diameter fitted closely around base of plant. 9. Burn badly infected plants as soon as discovered. 10. Apply arsenate of lead or Paris Green in liquid form. 11. Fresh hellebore or pyrethrum may be substituted for 10. 12. Destroy infected part as soon as discovered. 13. Cover plants with hill protectors. 14. Hand picking—should be done daily until further injury is unimportant. 15. Use traps—boards, sticks, clods, stones, adult insect hides under them. May be found in early morning or late evening. 16. Mash eggs—usually found on under surface of leaves. 17. Poison bait—(1) vegetable—spray clover with Paris Green or arsenate of lead, scatter fresh material around plants in evening. (2) Bran mash—White arsenic or Paris Green one-fourth pound, brown sugar one-fourth pound, bran ten pounds. Mix thoroughly and add enough water to make a damp mash. 18. Dirt bands, tin or strawberry box protectors. 19. Fall tillage.

How to Make the Sprays.

Arsenate of lead (powder) or Paris Green, liquid—1 oz. to 6 gal. water.

Arsenate of lead (powder) or Paris Green, dry—1 oz. to 3 or 4 lbs. air-slaked lime or flour.

Kerosene Emulsion—5 to 7% kerosene.

Nicotine sulphate (40%) 1 part to 700 to 800 parts water. Add small amount of soap solution.

Bordeaux mixture 4-4-50 formula.

Without apology we present several articles by Prof. Moore and Mr. Roberts. These were sent to all of the newspapers in the state earlier in the season and probably widely published but all will bear reading a second time. These notes are all thoroughly practical and remarkably well presented for amateur consumption.

Equipment for Drying Fruits and Vegetables.

Our grandmothers, who lived before germs were invented, dried apples in the open air, sometimes with a covering of mosquito netting but oftener without. Aside from the matter of dust and germs this is not a good way. Apples as well as other fruits and vegetables, should be more quickly and thoroughly dried than is possible when exposed only to sunshine a few hours a day.

No elaborate or expensive equipment is necessary.

A Box Dryer

A box of rough lumber 3 by 3 ft. and 6 ft. high with a small stove in in the bottom and lath trays with wire bottoms provides a cheap and effective dryer. There must be sufficient ventilation to carry off the moisture or the fruits will be steamed instead of dried.

Oat Sprouter

An oat sprouter such as used by poultry raisers for sprouting oats for green feed in winter may, according to Miss Harper, be used in drying vegetables. The sprouter consists of a cabinet with 5 trays, a water pan and a lamp beneath the pan. By not filling the pan we have a dryer instead of a sprouter. Ventilation is provided by slightly raising the top of the cabinet.

The Oven Dryer

A detachable oven such as used on gas and gasoline stoves will serve as a dryer if the door is left slightly ajar. An oven that has been discarded on account of cracks or other defects is especially adapted to drying as a hole may be made in the top to serve as a ventilator.

The Hotbed Dryer

The hotbed or cold frame can be converted into an excellent dryer by simply putting in a board floor. Here we have a most excellent heat trap in which fruit and vegetables can be dried in a sanitary manner. It will work, try it.

No doubt many of our members can suggest other and better plans. Send along your ideas, the July number will not be too late.

The excellent articles on home canning by Miss Harper, reprinted from our annual reports of 1909–1910 should be read carefully by every one interested in canning fruits and vegetables: that means everybody this year.

Alson Duane Brown.

Mr. A. D. Brown died Monday, April 23rd, at his home in the city

ALSON DUANE BROWN.

of Baraboo after a critical illness of ten days.

Mr. Brown moved from his fruit farm in the Skillet Creek neighborhood about three years ago because of failing health. Indigestion which developed into a cancer was the direct cause of his death. He was born in Oneida Co., New York, in 1847 and came to Wisconsin with his parents at the age of 19 and in 1867 was married to Miss Matilda Cook. They lived in Minnesota ten years and in the town of Dellona, Sauk Co., Wis., six years. Mr. Brown always had a liking for fruit growing and about thirty years ago purchased the place on which he established his fruit farm because he judged the location to be exceptionally well adapted to apple growing. The orchard which has grown up under his care proves his good judgment.

Mr. Brown was an earnest seeker of knowledge and an enthusiastic horticulturist. Because of deafness he could not take part in the discussions at our Winter Meetings but he was a faithful exhibitor there and also at the state fair and county fair. Mr. Brown has been very earnest in bringing to the knowledge of the public the merits of the variety of apple named Gem City. He has made an interesting collection of seedling apples, some of which are quite promising. Mr. Brown was the first within our knowledge in the state to build a fruit cave or cellar. This was a number of years ago and others have observed the value of this plan for keeping apples.

He leaves a wife and two children, Wayne E. Brown of Lone Rock and Mrs. L. B. Irish who with her husband now owns the fruit farm which was established by Mr. Brown. To those who are not horticulturally inclined Mr. Brown was best known as an earnest christian and until his hearing became impaired he was an active worker in the Methodist Church.

By William Toole, Sr.

Notes on Spraying.

Amount of Material: "About how much spray material will be required for one acre apple trees ten years planted, tops 6 to 10 ft. in diameter?"

(Answered by D. E. Bingham on basis of 75 trees.)

To thoroughly spray 75 apple trees of the size mentioned, 3 times, will require about five hundred gallons of material if the trees are loaded with fruit; if no fruit, three hundred gallons would do a good job. For the 300 gallons this would mean 24 lbs. copper sulfate, 6 lbs. dry arsenate of lead and 30 lbs. fresh lime.

Cost of material

Copper Sulphate	$3.00
Arsenate	1.25
Lime	.50
Total	$4.75

The dry Bordeaux sold in closed packages is seldom used by commercial growers but amateurs love it. The directions printed on the packages usually provide for mixing at least 5 gallons. A member has computed that 1 ounce is the proper amount for a gallon of water.

Watch for the currant worm. We predict that this pest will be especially destructive this year. This voracious serpent usually begins operations on the inside branches, thus escaping notice until only the outer leaves are left.

There are people who would give a billon or more for an appetite equal to that of the currant worm.

Powdered white hellebore is good medicine. Use a heaping tablespoonful in a gallon of water. A whisk broom will answer for a sprayer. Hellebore left over from last year and kept in a paper sack on the top shelf of the pantry is *not* good, get a fresh supply.

If the present dry spell (May 18) continues a few days longer plums will get through the blossoming season with little blossom blight. This destructive blight which so often kills all the bloom in seasons when rains are frequent is one manifestation of brown rot, *sclerotinia fructigena*, affecting both the twigs and ripening fruit. A dormant spray is advisable followed by lime sulphur 1 to 35 or bordeaux 3–4–50 just as soon as the first blossoms begin to drop.

An Omission.

The supplement to the March number contains among other things a discussion of lime sulphur and a formula for dormant spray, one part commercial lime sulphur solution to *eight* parts water with the caution added that at this dilution lime sulphur should not be used on growing plants. This is all very good so far as it goes but does not go far enough. Lime sulphur is now commonly used in place of Bordeaux for prevention—the different diseases of fruits and for this purpose one part of lime sulphur is used to thirty-five parts of water.

Good Tillage and Artificial Watering.

Proper tillage practices reduce to a minimum the necessity for applying water artificially, and in most cases should make artificial watering unnecessary. At times, however, garden crops demand additional moisture to that naturally found in the soil. The methods of applying water are various, but all save the overhead irrigation system are faulty in one or more respects. If one is gardening permanently it will usually pay in the end to invest in an overhead system adapted to his needs. Such a system is comparatively inexpensive.

Water Gardens Intelligently.

In any method of watering artificially, certain precautions should be observed. Preferably, watering should be done in the late afternoon or evening. This avoids loss of moisture and in some cases, injury of the plants. It also permits the water to soak deeper into the soil before rapid evaporation takes place.

Apply water liberally. Small, frequent applications are usually more injurious than beneficial. Enough should be put on to moisten the soil during the operation to a depth of three to four inches, depending upon the method employed. Its effects will extend somewhat below this by the following morning.

Placing the Soil Mulch.

The soil mulch should be re-established just as soon as possible after watering. During the warmer weather and on the loamy types of soil this usually will mean the following morning, providing the water has been distributed evenly. If there are wet places, do not leave the tillage of the remainder of the garden until these are dry enough to work. Leave the wet places and till all the rest.

Some are frequently deceived as regards the necessity for watering by the wilting of plants. Wilting is not always an indication of deficient soil moisture. Wilting is quite likely to occur on a bright day following a period of damp, hot weather, even though there be abundant moisture in the soil. Adding water at this time is not only unnecessary, but may even be detrimental.

Canning Vegetables from the Home Garden.

Blanchard Harper, Madison, Wis.

From 1910 Annual Report

Everyone interested in the canning of vegetables as described in my notes in the Report for 1909, should procure from the Agricultural Dept. at Washington, Farmer's Free Bulletin No. 359, "Canning Vegetables in the Home." Naturally I prefer my own methods, but the bulletin contains so much that is valuable that every one interested in the subject should secure a copy.

One fact stated there solved for me a problem that had long puzzled me; namely that peas gathered from the same vines within a day of one another should taste so differently when canned. A farmer grew for me two bushels of "Advancer" peas picked them in the evening and drove six miles the next day to deliver them. They seemed in good condition. I canned some that day and the remainder the next. Those cans of peas kept perfectly—there was no sign of spoiling, but they were as flat and tasteless as sawdust. I find the explanation in the following statement the author of the bulletin Mr. J. I. Breazeale, makes in regard to corn, one which I believe holds true in regard to all sweet vegetables, and on which too much stress cannot be put. After stating that vegetables should be gathered fresh, if possible with the dew on them, and kept damp and cool until used, he says, when he speaks of corn, "that experiments * * * have proved that in the sweet varieties of corn the amount of sugar diminishes very rapidly after the ear is pulled from the stalk; therefore in order to retain the original sweetness and flavor it is necessary to can corn very soon after it is pulled, within an hour if possible." Incidentally I may add that *for table use* I have kept corn twenty-four or forty-eight hours with but slight loss of flavor, by laying each ear in the husks *directly on ice*, but not in any other way.

The following recipes are in use by several successful housewives and are contributed as affording a means of keeping corn when otherwise variously possible conditions would prevent canning.

Canned Corn. (Mrs. Frank Mac Connell.) A recipe very generally used. To 9 pints of fresh corn cut from the cob, add one pint of sugar, and one pint of salt (if the salt is very strong use ½ pint), and three pints of water. Boil all together for five minutes and pack while hot in thoroughly sterilized jars. To serve soak in several changes of water to remove the salt; cook with a little cream until scalding hot.

Dried Corn, as made on the *Turvill Farm*, by Mrs. Elizabeth F. Wood. Gather tender fresh corn, boil it in water three minutes drain and cool; then cut the grains from the cob, but not too close. Spread the kernels in a thin layer in a large pan and place in a *cool* oven, stirring and shaking from time to time to allow it to heat and dry evenly for several hours. The flavor seems better if the drying is not prolonged over a day. When dry store loosely in a paper bag kept in a dry place. To serve, soak over night in water, then simmer gently on the back of the stove for several hours, and add butter and cream before sending to the table.

Dried Corn as made by *Mrs. Albert J. Lamson.* Gather the corn when best for the table, score the kernels with a knife and press out the pulp, or use a "corn scorer." Take as many enameled pans or plates as required, grease them lightly with butter and spread the pulp thinly over the bottom of the plates, the layer should not be more than ¼ inch thick. Place the pans in an oven not warm enough to burn or scorch the corn, but warm enough to cook it, and allow them to remain until the corn thickens, so that it can be cut into wafers 3 inches square. Gently turn the wafers to allow the under side to finish drying in the now cooler oven, or finish the drying in any suitable warm dry place. Corn begun in the morning should be done by night. To serve, soak the wafers a few minutes, and cook with salt, butter and cream.

Rose Diseases and How to Control Them.

The rose gardener should understand that roses are subject to a number of fungous growths causing serious diseases and that he must ward these off carefully if he would keep his plants in the healthful condition necessary for satisfactory growth and the production of blossoms. These fungous parasites rarely kill the plants outright, say specialists of the U. S. Department of Agriculture, but by their presence the vigor of plants is greatly reduced, the foliage may be rendered unsightly, branches more or less distorted or disfigured, and the quality of the blossoms lowered. In considering the fungous diseases of these plants the fact must be recognized that in common with similar diseases of other plants treatments are preventive rather than curative. While thorough and repeated sprayings with a suitable fungicide will in most cases so check the development of the parasite that the

disease for the growing season will be in a great measure controlled, the full benefit of fungicidal applications can only be secured by their early use in the spring, guarding in this way against the recurrence of a disease of the previous season.

Fungicides to be recommended for rose diseases are Bordeaux mixture, lime-sulphur, potassium sulphid, and ammoniacal solution of copper carbonate. The lime-sulphur has proved very valuable, especially in controlling mildew, as it does not injure the foliage of even delicate tea roses.

Powdery mildew.—Powdery mildew is extremely common, few gardens being entirely free from this most destructive of all rose diseases. Wild as well as cultivated roses suffer from it, crimson ramblers being especially susceptible. The fungus frequently appears very early in the season on young buds, leaves, and young shoots causing the appearance of a delicate white mildew that becomes mealy after the development of the summer spores. If the attack is severe, the normal development of the succulent young shoots is arrested, the leaves become curled and deformed, falling prematurely, and complete defoliation sometimes results. Later in the season the winter spores develop. These spores are capable of persisting through the winter and setting up a new infection in the spring.

Rose rusts.—Rose rust appears as conspicuous, orange-colored swellings on the green parts of rose bushes in the spring or early summer. Later these take a deeper shade and become powdery. Small, circular spots may occur on the leaves.

Anthracnose.—Anthracnose attacks principally the leaves, but also, to some extent, the branches, causing the appearance of blotches, which later discharge a pinkish mass of spores. The affected leaves are dwarfed and fall.

Leaf-spot. There are several leaf-spot diseases of roses. In most cases the spots have a more or less brownish center with a purplish border.

Leaf-blotch.—Leaf-blotch, which is also known as black-spot, ranks next to powdery mildew in frequency of occurrence. Bush roses are more susceptible to this trouble than climbing roses and the attacks are most severe in wet seasons. The first symptoms of the presence of the parasite are irregularly shaped blackish spots without definite borders on the upper surface of mature or nearly full grown leaves. These spots may grow together so as to cover almost the entire leaf.

Practically all these diseases require the same treatment, which consists, in general, of careful spraying for control during the growing season and the cutting out of diseased portions of the plant in the fall, followed by more spraying of the shortened plant. The diseased wood removed, together with the old leaves and debris under bushes, should be burned. In case of attacks by rusts and leaf spots, the diseased wood or leaves should be removed and burned even during the growing season.

For powdery mildew, the control sprayings should be with lime-sulphur or potassium sulphid. After cutting back in the fall, a similar spray should be made use of. The control spraying for rusts should be ammoniacal copper carbonate. The fall spraying should be with a strong Bordeaux mixture. For leaf-spot and leaf-blight, the control sprays may be either Bordeaux mixture or ammoniacal copper carbonate, and the fall spraying should be with the former.

Another disease to which roses are subject is canker. A wholly satisfactory method of control has not been worked out for this disease. The early symptoms are the appearance of small reddish patches on the green parts, generally of 1-year-old growth. The disease is caused by a fungus classed as a wound parasite, that is, the spores gain entrance to the bush through certain mechanical injuries. These may be slight ones made upon the *young branches by the thorns of the* bush itself when one branch has been blown against another, or by insect punctures. Such infected areas may increase until the entire stem is surrounded and may extend for several inches along the branch. The only advice to be given is to cut away rigorously all diseased branches, and it may be necessary to cut back entire bushes if badly infected. Cover the exposed surfaces made by this cutting with paint or tar. This diseased material must be pruned and the dormant bushes sprayed with strong Bordeaux mixture in both the autumn and early spring. At the first appearance of the disease, cut away and destroy all the branches showing infection. Then spray about every 10 days, first with Bordeaux mixture and later with ammoniacal copper carbonate, as spraying has no disfiguring effect upon the foliage, an appearance to be avoided when blossoming time is near. It is possible that by such careful attention the bushes may outgrow the disease.

Insect Enemies of Roses and How to Combat Them.

In the path to easy success with roses lie numerous insect pests which, unless prevented, will devour leaves or suck juices, thus

seriously impairing the vitality of the plants. The only way in which the rose gardener may prevent these attacks is by careful and in insistent spraying with insecticides.

Insects which most commonly affect roses, according to specialists of the U. S. Department of Agriculture, are of two general types, those which eat the foliage, as rose slugs and the rose chafer, and those which suck the sap, as aphids, scale insects, and thrips. The presence of leaf-eating insects is usually first detected through the discovery of partially eaten leaves or of skeletonized leaves; that is, leaves from which a portion of the lower or upper surface has been eaten, leaving the other surface as a transparent membrane, or leaves the fleshy part of which has been eaten clear through, often leaving merely the midrib and veins. The discovery of the enemy frequently follows. Protection from this sort of attack is afforded by hand picking or by covering both surfaces of the foliage thoroughly with some poisonous substance, as arsenate of lead. Wherever a garden hose is available, a strong stream of water directed against rose slugs, on the foliage will knock them off and, in many cases, save the bush from further injury by them. The rose chafer is a rather difficult insect to control, and arsenical poisons applied at double the usual strength often fail to kill them before the damage is done. Frequent hand picking of the beetles and dropping them into a vessel containing water covered with a film of kerosene, or screening the plants with mosquito netting, especially the latter, often affords the only means of preventing their destructive work.

Insecticides.

Arsenate of lead, which may be obtained as a powder or a paste, has been found to be one of the most effective substances for use as a spray against leaf-eating insects. It is a deadly poison and should be handled with great care. About one-eighth of a pound of the paste or one-sixteenth of a pound of the powder to 10 quarts of water makes a solution of the proper strength.

Sucking insects obtain their food by sucking the sap. Aphids are usually on the youngest growth at the tips of the branches, both on the stems and on the under side of the leaves. When badly infested the leaves curl and protect the insects on their under surface. Thrips injure the flowers, while scale insects usually inhabit the woody portion of the bush and are capable of killing it. Insects of this class have to be killed by the insecticide coming in contact with them. Materials used for this purpose are 40 per cent nicotine sulphate, pyrethrum, fish-oil soap, kerosene emulsion, and lime-sulphur. The material should be applied in a fine spray, with considerable force, so as to find its way under the foliage and strike the culprit. Death comes from the insecticide closing the breathing pores and suffocating the insect or penetrating to its vital parts, or both. Great thoroughness is needed in applying these insecticides. The aphids may often be knocked off by a strong stream of water from a hose where available, and this treatment, frequently given, is often all that is necessary to keep them in check. An abundance of ants on the plants is always suggestive of the presence of aphids.

Forty per cent nicotine sulphate, a liquid procurable in most seed stores under various proprietary names, diluted with about 1,000 parts of water in which a little fish-oil soap or good laundry soap has been previously dissolved is now recognized as the most efficient aphid remedy. For small quantities, add 1 teaspoonful of the nicotine to each 1 or 2 gallons of water in which about one-half an ounce of soap has been dissolved. One thorough application is usually 100 per cent effective, though a second spraying many sometimes be necessary. The necessity of covering every individual insect should be constantly borne in mind.

Other remedies useful in combating the sap-sucking insects are pyrethrum, or Persian insect powder, used at a rate of 1 ounce to 2 quarts of water; fish-oil soap dissolved at a rate of ¼ pound to 8 quarts of water; kerosene emulsion; and lime sulphur and other commercially prepared insecticides.

Some Transplanting Reminders

Cabbage, cauliflower, tomatoes, eggplant, pepper, and celery are always transplanted, while the vine crops are started in the hotbed and transplanted when an earlier product is wanted. Plants that have a tough, fibrous root system like the first group are easily transplanted, while those with large or tender roots like the second group must be handled more carefully. Roots like parsnips and carrots, where a clean, smooth root is desired cannot be transplanted successfully because the tip of the root is broken off and the tap root is covered with a mass of hairy roots.

In transplanting, the plants must be handled in such a way that they will not suffer from lack of moisture and wilt. This can be done in a number of ways:—(1) by taking care not to damage the root system; (2) by transplanting as quickly as possible after removing from the seed bed; (3) by puddling the roots at setting time; (4) by shading the tops; (5) by setting in the evening after the sun has gone down, or just before or after a rain; (6) by pouring water in the hole where the plant is set; the wet soil should be covered with a mulch or dry soil; (7) by pruning the tops of the plant; from one-third to one-half of the leaf area of cabbage, onion, or tomato plants should be cut off so as to limit the transpiration of water; care must be taken, however, not to injure the central bud or "heart" of the plant; (8) by sprinkling the soil with water with a hose or overhead irrigation system; care must be taken not to compact the soil, and if it is compacted, it should be loosened as soon as the ground is fit to work; (9) by setting the plants whose tissues have been hardened by exposure to outdoor conditions and judicious watering.

Onions.

The onion puzzles many amateurs; one writes to inquire if good winter onions can be grown from "sets" and when answered affirmatively comes back with the experience of a neighbor who planted "sets" and got no mature bulbs but only "roots" that wintered over in the open ground and the following year sent up tall, hollow stems crowned with bunches of "sets."

The most common inquiry relates to the best method of raising onions for winter use, whether from "sets" or seeds.

Planting time is now past except possibly for a late crop of "black-seed" onions but the following brief outline of the onion family may be of interest to beginners if not of value.

Cultivated onions or onion-like plants are named by Bailey under six species but only three of these, the true onions, will be considered here. The others, cives or chives, garlic and leek are only occasionally grown in home gardens and are not of general interest.

Probably ninety per cent. of all onions grown for winter use and storage, whether by commercial growers or home gardners are grown from seed. If you want to know how onion seed is obtained select a sound onion of the Danvers or Wethersfield type, (onions grown in 1916 will be hard to find now but a sound bulb shipped from the south will answer,) and plant it in the garden and by October your curiosity will be satisfied. Do not attempt to raise your seed, however, unless you are an expert market gardener or seedsman as the production of a good strain of onion seed requires much skill.

The common onion then is grown from seed planted in the open ground in early spring and the crop matures in September or October.

But, you say, very good onions may be grown from "sets." Certainly if you get the right kind of sets and you are quite apt to get right kind as the wrong kind, to be described later, is seldom offered for sale.

The onion "sets" offered for sale this spring and so popular with amateur gardeners are simply dwarfed and stunted onions grown from seed last year. The seed was sowed very thickly, late in the season and usually in broad drills. The object was to produce a miniature onion that planted the following spring will complete its growth. The most desirable sets are $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter. Larger ones are apt to run to seed and smaller ones produce inferior onions. Onions from sets mature much earlier than those grown from seed and of course produce green onions for table use much earlier.

This is all very fine but here enters another "set" onion, the Egyptian or Top Onion. These sets, which may be had from seedsmen and occasionally found in other stores look much like the real sets. The top onion set rarely produces a sound bulb of long-keeping qualities and is grown wholly for green onions. If left in the ground over winter it sends up a stalk the following season that produces a cluster of bulblets or sets on top. Don't plant Egyptian or top onion sets for winter onions.

The third common species is the multiplier or potato onion. The "multiplier" onion instead of being solid like the "onion of commerce" grown from seed, consists of two, three or more small bulbs in one skin. When planted each part produces a compound bulb. Like the Egyptian the multiplier is grown for green onions and is of little account otherwise.

Plums do well on sandy soil. Apples do best on a loam soil underlaid with clay. Many times a side hill may be made good use of for apples or plums.

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Can What You Can.

Everybody is doing it this year, —raising vegetables and unless plans are made to can or dry part of the garden produce there is bound to be a great waste.

Now is the time to begin preparation for the big Fall Drive, canning and drying. After looking over carefully all available material on preserving vegetables for winter use, the editor offers the two articles by Miss Blanchard Harper of Madison, to be found elsewhere in this issue, as the plainest most practical and best all around presentation of the subject to be found.

The big spray for apple scab is the "cluster bud" spray. See March supplement for illnstrations and formulas.

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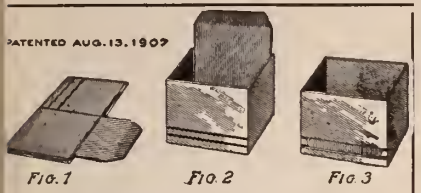

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Volume VII Madison, Wisconsin, July, 1917 Number 11

Some Tricks of the Trade to Increase Garden Yields.

(By Prof. J. G. Moore.)

Practically every gardener has a few special practices or tricks of the trade that he uses to get earlier or a better produce, or to economize space or labor. Many of these practices are fitted only for local situations, but a few have a universal application.

The celery crop offers perhaps wider opportunities to test the gardener's skill than any other vegetable crop. The practices connected with starting the plants, setting them in the garden, cultivating, and blanching the crop vary a great deal.

There are two types of celery in general cultivation, the green type and the self-blanching. Giant Pascal and Winter Queen are examples of the former, and White Plume and Golden Self-Blanching of the latter. The green types have more green coloring matter in the leaf stalks and are harder to blanch than the self-blanching varieties. However, the green types are of much higher quality, they keep much better, and are more vigorous in growth and resistant to disease. They are preferred for storing.

HANDLING EARLY AND LATE CELERY.

The early crop is started under glass during the latter part of March and transplanted. It will take six or seven weeks from sowing for the plants to reach transplanting size. Celery planted on or before May 15th is ready to harvest by the middle of August. The late crop is started from seed sown outdoors about the middle of May and is transplanted to the field around the first of July.

Planting distances for celery vary from as close as 6 in. x 6 in. with the new celery culture to 6 in. x 48 in. A good distance for the home garden is 6 in. x 24 in. This gives room enough for cultivation and yet utilizes the ground. The new celery culture can only be used where the soil is very rich and where plenty of moisutre is available. Very little blanching is necessary where this method is used, as the shade of the leaves blanches the stalks.

TRENCH METHOD LOSES POPULARITY.

The old fashioned method of planting celery is to set it in trenches six or eight inches deep. While the celery can be blanched very easily with soil when set in trenches, the method has, in recent years, been largely discarded. The disadvantages of this method are that the celery is hard to cultivate, heavy rains wash the trenches full of soil, the extra labor of digging the trench, and unless we have a very deep soil, we are likely to set the plants either in the subsoil or very close to it.

If there are no facilities for irrigation, the best crop insurance for celery is mulching the ground when the celery is six or eight inches high. Well rotted horse manure forms the best mulching material, but straw, leaves, or marsh hay may be used. The mulch should be put on to a depth of three or four inches. After the mulch is put on, further cultivation is unnecessary. It conserves moisture better than cultivation and keeps the soil cool, loose, and moist, a condition which is very favorable to the growth of celery.

WHEN AND HOW TO BLEACH CELERY.

In blanching celery, the aim is to get rid of the green color of the stalks. Anything which shuts off the light while the celery is growing accomplishes this purpose. The method of blanching depends upon a number of factors, chief among which are (1) the season of the year (celery will rust badly if blanched with soil during the warmer months) (2) the variety (the self-blanching types can be blanched far more easily than the green types) (3) thickness of planting (when celery is planted as close as 6 x 6 or 6 x 8, the thick foliage will blanch the stems) (4) the use to which the celery is put (if wanted for storing, the celery may be blanched in storage).

SOIL BLEACHING IN FALL BEST.

Blanching the celery with soil is perhaps the most common way. It should only be done in the fall, when the days are cool. In blanching with earth, the plants are first "handled." That is, soil is pressed around the base of the plant so as to make it grow upright. Soil is then tilled up around the plant to within three or four inches of the top. Blanching celery with earth gives it a better flavor than blanching with paper and also protects it from frost.

The simplest way to blanch celery in the home garden is to wrap the individual plants with brown paper. The paper should cover all but the leaves and be wrapped tightly around the plant. Drain tile, boards, and paper bands are also used.

Keep the orchard and fruit plantation cultivated clean.

A Michigan Experiment in Marketing Grapes.

James N. McBride, Michigan Director of Markets

It was an experiment in standardization in the marketing of fruit known to be of high quality. Two inspectors were stationed in the territory and they examined the grapes brought in by growers of one of the larger shipping associations. Grapes which were found to meet the Michigan standard which is as follows: "Grapes that are mature, sound, clean, of ripe color, practically free from rot, mildew, mold, diseases and insects, true to name for variety indicated, medium to large berries; bunches well formed and compact; packages of legal size and full weight, were loaded into a certified car. Grapes not coming up to the standard were marketed as in the past. Certificates were issued for certified grapes, these certificates going with the bill of lading to the purchaser. At first it required a high order of salesmanship to get better prices for certified fruit, but by the end of the second week the shipping association had more orders for certified grapes than it could fill. From one to two cents more a basket was charged for certified fruit. This amount went to the growers. A total of 24 certificates were issued: 14 of these were for straight cars of certified grapes, 10 were for cars in which only part of the grapes were up to the standard.

Three conclusions have been reached as a result of the work of the inspectors. These are as follows: First—as the grape marketing is now done, there is little reward for the grower who produces fruit above the average. He has the satisfaction of knowing that he is a good grower and that his grading and packing are well done, but his fruit goes into cars along with the grapes from his neighbor, who may be an indifferent grower and no packer at all. And both get the same average price.

The second conclusion is—that the local shipping associations are unable to provide a uniform system that is efficient. Their growers are their clients and to offend one means that they lose in volume of business and that a rival shipping association gains in volume of business.

The third conclusion is that the state can work out an inspection system that will be fair to all concerned. It is a neutral party and is interested neither in selling fruit nor in the buying of it. The shippers should defray the expenses of the inspection service.

The inspection system used in connection with grapes has this advantage—that it is no police regulation, punishing people because of failure to do certain things, but is a system whereby those who do better than the average receive a reward in recognition of their efforts.

It was discovered that part of the trade was not enthusiastic over receiving state certificates of quality. It injured their chances of making good on claims for allowances when the market was declining.

Use Garden Hoe to Fight the Foe.

Cultivate your war garden often and thoroughly.

Cultivation means the keeping of the surface soil, the upper two inches, loose.

Cultivate more in dry weather than in wet.

Cultivation makes a dust blanket and prevents the loss of soil moisture by evaporation.

To know the tricks of the enemy is half the battle. Know the insects and diseases which attack your vegetables and you will know how to fight them.

Sod when thoroughly broken up makes the soil richer. The job is to get it broken up and worked into the soil.

The easiest time to kill weeds is just as they begin to start. Therefore, start the garden hoe and the cultivator early.

Skill is shown and good results obtained when the gardener does each job at the right time and in the right way.—R. S. Macintosh, Universty Farm, St. Paul, Minn.

Orchard and Garden.

Every farm home should have a good strawberry bed, seventy-five or more raspberry bushes and a few black, white, and red currant bushes. The black currants are thrifty and vigorous of growth. Red currants are sometimes a discouragement because the currant worm gets the leaves. This is easily prevented by spraying with paris green or arsenate of lead.

Plant peonies or rhubarb as soon as the ground can be worked.

The following are good varities of peonies: Festive Maxima, Mons, Jules Elie, Marie Lemoine, Baroness Schroeder and Felix Crousse.

Farm Gardens Pay Handsome Profits.

The garden every year is becoming a more important part of the up-to-date farm. The reason for this is that more and more farmers are seeing in it a source of big profits. A half acre garden, for example, can give a net profit of about $45.

Fight Fire Blight of Apple.

Circular No. 70, Extension Service, Coll. of Agr.

By R. E. Vaughan.

Fire blight is one of the most destructive apple diseases found in Wisconsin orchards. It often kills the trees entirely or injures them so severely that they require years to recover from the attack. Outbreaks of fire blight are relatively more severe when the weather is warm and rainy or cloudy at blossoming time, or during the period when the young wood grows rapidly. Pear trees, quince bushes, wild crabs, and some ornaments belonging to the apple family are also affected by fire blight. The disease is known under different names, as fire blight, pear blight, blossom blight, canker blight, and canker and collar blight, according to the tree or part attacked.

Healthy Blossoms

CAUSE OF FIRE BLIGHT

Fire blight is caused by bacteria which get into the young growing tissues through the nectaries (the part of the flowed containing nectar) in the blossoms or through wounds made in young twigs by insects, or into larger branches through wounds made by pruning tools. Once in the growing part of the wood where there is plenty of moisture, the bacteria increase rapidly in number and kill all the parts they invade leaving them shriveled and dark colored. When the young wood and bark are soft, as in spring and early summer, the bacteria work rapidly down the twigs or shoots into the larger limbs or trunks where cankers are formed. These cankers are known as "hold-over cankers" because it is at their edges, where the tissue does not dry out, that the bacteria are kept alive over winter. When the sap starts in the spring, the few bacteria which are alive multiply rapidly and form little pockets in the cankers next to the live bark. In rainy weather they come to the surface through the bark lenticels, or cracks, and are ready to spread the disease.

SYMPTOMS OF FIRE BLIGHT

Fire blight has some very striking symptoms:

Brown blossoms accompanied by a withering and blackening of the young fruit and fruit spurs.

2. Sweetish, sticky, milk-white or brownish ooze which in rainy weather comes from the freshly blighted parts and cankers. It attracts insects which distribute the disease germs.

3. Black or dark brown leaves which are withered after the disease has passed through them but which for some time cling to the trees. Affected trees have the appearance of having been swept by fire, hence the name "fire blight."

4. Shriveled and blackened bark on the blighted twigs and suckers.

5. Cankers on the larger limbs or trunks. These cankers are usually slightly sunken and blackened and have their bark rough and cracked along the edge between the diseased and healthy wood.

A Blighted Apple Twig

6. General yellowing and dwarfing of the leaves in the growing season, and premature dropping from one or more of the larger limbs. This is frequently due to blight attack at the base of the trunk, a form of the disease which is known as "collar blight." The bark over the collar blight has a watersoaked appearance in mid-summer. Similar yellowing of the leaves may

also be caused by anything which interferes with the nourishment of the tree as lack of food or by black rot canker, scab, or winter injury.

HOW TO CONTROL FIRE BLIGHT

Fire blight is one of the most difficult orchard diseases to control. The pruning knife, properly used, is the only direct weapon against it. Blight cannot be controlled by spraying or protective washes. But these help to keep

Blighted Blossoms

in check insects which carry the blight. Sprays, therefore, may be indirectly helpful in fighting the disease.

THE TEN COMMANDMENTS OF FIRE BLIGHT CONTROL

1. Cut out thoroughly all hold-over cankers. This should be done in the dormant period and is more easily done by removing the blighted branches well below the points where the last signs of the disease occur. If the branch is large and forms a part of the frame work of the tree, it may be saved by cutting away only the diseased portion. In such cases remove all the dead wood and bark back into the bright wood and leave the wound smooth. The wound heals more readily if the bark about the edges is trimmed with a sharp knife held in making the cut at right angles to the branch. The lower part of the cut should come to a point like the bottom of a "V" in order to provide good drainage. This precaution makes the wound less liable to heart rot. To make sure that the cankers are all removed, it is necessary to go over the orchard several times, approaching the trees from a different angle each time.

2. Treat the wounds on the large limbs and trunks by disinfecting them with a solution of corrosive sublimate made as follows: one part corrosive sublimate to 1,000 parts water. Convenient-sized tablets of corrosive sublimate may be obtained from any drug store with the directions for making the solution. Keep in glass jars or stone jugs because the solution corrodes metals. It is a deadly poison if taken internally and must be kept from children and animals. After the wounds are dry, paint them with a good white lead and oil paint. If desired, a little lamp black may be added to the paint for the appearance.

3. Prune out new infections promptly and in case of suckers or small branches, cut a foot or more below the blackening of the bark because the bacteria work farther under the bark than its appearance indicates. It is especially important to go over young orchards frequently to remove the blight before an epidemic has time to start. In case of a blight epidemic in blossoming orchards, the prompt removal of all blighted parts may be impractical. In such orchards, it is important to be sure that all hold-over cankers are destroyed.

4. Disinfect the pruning tools after each cut by wiping them with a clean cloth wet in the corrosive sublimate solution. This destroys any blight bacteria that might be carried on the saw or knife.

5. Burn blighted material promptly because in damp weather the bacteria remain alive in it for some time.

Twig Blight and Canker

6. Remove suckers on trunks and large branches as soon as they appear; they are especially liable to blight and give rise to cankers and collar--blight forms of the disease.

7. Avoid forcing sappy wood growth by too frequent cultivation or too heavy applications of manure and nitrogenous fertilizers because the blight bacteria work most rapidly and severely on such wood.

8. Do not set Transcendent crab because it is especially susceptible to blight under Wisconsin conditions. Yellow Transparent and some other Russion varieties are also more or less susceptible.

9. Kill noxious insects which

spread blight, of which aphids are the most important. Bees should not be poisoned because they gather honey but lice and other insects can be destroyed. For the majority of these pests this can best be done by the use of nicotine sulphat ("Black leaf 40"), 1 part to 1000 parts of water or other spray liquid. Combine the tobacco solution with the regular spring and summer sprays, or with water in case no other spray is desired. When used with water alone, add laundry soap, 2 pounds to 100 gallons. This greatly increases the spreading qualities and effectiveness of the remedy.

10. Cooperate with all your neighbors in cleaning up old orchards, inspecting and pruning. The tenth commandment is very important. Fire blight control is a matter for community, as well as individual, effort.

Other Orchard Diseases.

Fire blight is only one of several diseases with which the Wisconsin orchardist must contend.

Do not confuse it with the following troubles each of which requires different treatment.

Apple scab. Black spot and cracking of fruit, spotting and curling of leaves.

Spray with Bordeaux mixture or lime sulfur.

Apple rust. Yellow spots killing leaves. Worst on Wealthy. Starts as galls on red cedar and spreads from this to the apple.

Destroy all read cedars near the orchard and do not plant Wealthy apples in regions where the red cedars cannot be exterminated.

Winter injuries. Sun scald on the southwest side of the trunk or larger limbs of young trees is the commonest form. Crotch canker and crown rot are other kinds of winter injury.

Whitewash or shade the south side of the trunk. Avoid over fertilization and late summer cultivation. Use cover crops to mature wood in autumn.

For detailed advice about these or any other orchard or crop pests write to College of Agriculture, University of Wisconsin, Madison.

Defend Your Garden.

L. G. Gentner

Circular 82, Agr. Extension Service, Coll. of Agr.

Insect pests always take a heavy toll out of garden crops.

If you have spent your time and money in planting a garden you can ill afford, this year in particular, to let your efforts be defeated by lack of control of insect pests.

After the insects once become numerous on the plants, it takes but a short time for them to do a great deal of injury, especially on young plants. Keep them under control from the start. Every one that you miss early in the season will mean many more later on.

As weeds furnish food and shelter for insects, one of the first things to do is to keep the garden free of them.

Where the insects are only few in number or are so large as to be easily seen, they may be kept under control by hand picking and destroying. Of course, this will take quite a little time and labor. It is therefore, often less expensive and more effective to spray the plants.

LEAD ARSENATE "GETS" CHEWING INSECTS

To control insects that chew the leaves and eat the plants spray the plants with arsenate of lead, 2 ounces (10 heaping teaspoons) of the powder to every gallon and a half of water; or dust on the plants the powder diluted with 3 parts of air slaked lime or fine dust.

Early morning is the best time to dust the plants for they are then wet with dew. Arsenate of lead is a deadly poison and care should be taken to keep it from children or animals. It is better to use than Paris green, because it sticks to the foliage better, is not so likely to burn the foliage, and is much cheaper, especially since the war has made Paris green very expensive. On plants with smooth leaves, such as cabbage, a little soap should be added to the spray to make it stick and spread better.

SPRAY LICE WITH SOAP SOLUTION

Plant lice may be controlled by spraying with a strong soap-solution which should be forced into the curled leaves and thoroughly cover the bugs. They are often found on the under sides of the leaves and on the tender shoots, causing them to curl up. Fish oil soap is best, but ordinary laundry soap may also be used in making the spraying solution. It may be made by adding one-half pound of the soap to every 4 gallons of water. Tobacco sprays are very good, especially nicotine sulfate used at the rate of 1 part to 800 parts of water.

POISON BRAN MASH FOR CUT WORMS

To rid your garden of cutworms feed them on poisoned mash. They hide in the ground during the day, but come out at night and cut off young plants near the ground and also feed on the foliage. If one scatters poison bran mash over the ground several days before the plants appear or are set out, the worms in the soil feed on this and will be poisoned. The mash should be scattered in the early evening so that it will not dry out before the worms feed on it, and may be applied at any time during the season that the worms cause seri-

ous injury. Care should be taken to keep poultry and other live stock away from it.

To make up the bran mash mix 2 ounces of white arsenic or Paris green with 3 pounds of bran. Dissolve 1 ounce of salt and 2 ounces of cheap syrup in a little water. Then mix all together adding enough water to make a crumbly mash. The mash may either be broadcasted or placed about the bases of the plants.

SPRAYING WILL NOT KILL THESE

Worms that bore inside of the vines and stems of plants cannot be controlled by sprays. In the case of the stalk borer on potato and tomato plants, infested parts should be cut off and destroyed as soon as noticed. In case of the squash vine borer, the worm may be killed by slitting the vine with a sharp knife.

CAUTIONS

1. Arsenate of lead, Paris green and poison bran mash are deadly poisons. Keep children and animals away from them.

2. Do not spray cabbage with arsenate of lead after the heads are made in the fall; beans after the pods have formed; or tomatoes after the fruit is nearly full grown.

3. Always use the right kind of spray for the right kind of insect.

For maggots on onions, radish, and turnips there is no satisfactory control except to destroy the infested plants. These whitish maggots will often work in the roots of plants, tunneling through them and causing the plants to wilt or become dwarfed. Cabbage maggots may be prevented from getting on the plants by acing tarred felt discs about the bases of the plants at the surface of the ground as they are being set out.

Squash bugs are resistant to spray. If pieces of board or burlap are placed near the plants the bugs will collect under them and may be gathered and destroyed early in the morning.

Liquid sprays may be applied with a small hand sprayer which can be bought at a small cost. Dust sprays may be dusted through a cloth sack or applied with a dust gun.

As soon as the crops are harvested all refuse matter, old vines and stumps should be gathered and destroyed by burning. If left in the garden, they will give food to the insects and will be a shelter for the winter.

For further or more detailed information write the Department of Economic Entomology, College of Agriculture, Madison.

Canning Greens.

Blanchard Harper.

Pick over and wash carefully any greens such as Swiss chard, spinach, lambs quarters, dandelion greens, horseradish greens or any other greens.

After washing carefully lay them in a piece of cheese-cloth and set them in a steamer or a kettle in which there is only a little water in the bottom. Steam them until they wilt. Now immerse the bundle as quickly as possible in very cold water and remove immediately. Do not let it drain very long. Open the package and pack the greens tightly in glass jars and fill with hot water and put in a teaspoonful of salt for every quart. Now sterilize the jars in hot water for 90 minutes as given in former recipes. As soon as the boiling of the water is checked immediately seal tightly, then wrap in brown paper before storing. The rapid changes from hot to cold and to hot water materially arrest the growth of the bacteria. The States Relations Service recipe suggests the addition of olive oil and a little dried beef for flavoring, but my experience makes me prefer to omit them.

Save All the Peas.

As the green peas get too ripe for the best eating do not leave them on the vines to rot or to feed the pigs and chickens. Do one of the three following:

Pick the peas and shell them and dry them according to the old process of drying, in the sun or some of the quicker methods recommended in the Farmer's Bulletin, 841 U. S. Dept. of Agriculture—"Drying Fruits and Vegetables in the Home" with recipes for cooking—to use for seed, soups or baked peas (cook like navy beans.) Thoroughly ripened peas dry easily in the sun; green peas dry well if dried as advised for corn as dried on the Turvill Farm by Mrs. E. T. Wood and cooked very similarly when wanted. Save every pea to use it so that some more portable food will be available for our armies and our allies.

B. H.

Fungus diseases—Use Bordeaux mixture both to prevent infection and spread of disease.

Queen-of-the-Market asters are best for pot plants. They are also among the earliest for outside planting.

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This is the regular July number of Wisconsin Horticulture. For the Fourth of July number, mailed July 2nd, the editor alone is responsible; not even the president of our society was consulted so if there be any disappointment on the part of members who would rather have had garden notes earlier in the month, blame the editor only.

As these words are written the special edition has not been mailed and I do not know how it will be received. There may be censure or there may be some slight word of praise, but for neither of these am I concerned. But if any word in it serves to awaken in any one even if only in one mind, a realization that we are engaged in a just war; that we are fighting for ourselves as well as for the sacred rights of all free peoples; that in facing the Kaiser of Germany and his military machine we are facing the most savage and brutal foe the world has ever seen; that the war, which has exceeded in horrors any ever before known is HERE and NOW and not something that **may** happen, then I will be content.

The Oshkosh Meeting.

On August 22–23 we will all go to Oshkosh for a two-day convention. The program will occupy one day and one day will be devoted to studying gardening at first hand. The gardens and their gardeners, the best in the state, are there, Rasmussen, Christensen, Phillipson, Roe, and a dozen others all experts.

They all refuse to appear on the program, preferring, no doubt, to demonstrate by deeds rather than words. They will all answer questions, however, or we will know why!

There will be several members on the program that none of us can afford to miss. The August number will give full particulars.

Last year we saw what skill plus money can accomplish, this year we are to see how skill may be employed **to make money.**

There will be no "entertainment" in the commonly accepted meaning of the term, no bands, no fireworks nor spectacular displays, but that there will be a hearty welcome and that we will be "entertained" no one who knows Oshkosh doubts.

Let's all go.

The Gardener's Advisory Council.

Members of our society have responded nobly whenever called on for help. Many direct personal appeals have been sent out by the secretary and in every case the response has been prompt and the service rendered of great value.

Feeling that too much could not be done to encourage the thousands of garden beginners all over the state, especially as only a small percentage are members, the "Gardener's Advisory Council" was organized.

Members of the Council, appointed by the president, were asked to spend at least four hours a week inspecting home gardens and giving advice and counsel to beginners.

One hundred appointments were sent out, mostly to members in small towns and cities. All but nine of this number accepted and every one of the nine gave a satisfactory reason for declining. Not only did the 91 accept but did it in a way that gives cheer to the souls of those of us who are trying to organize the food army of the state for the great struggle ahead.

Here are a few words that came with the acceptances.

Dear Sir: I accept with pleasure and honor my appointment as member of Gardener's Advisory Council and will make every effort to be of service to the cause.

I have been working along these lines ever since the call came to increase food production. In our own planting we are using every inch of land and have been advising others to plant a garden. And will make a greater effort now.

L. Herziger, Neenah.

"I consider it an honor to be *drafted,* will be glad to do all I can to help. Have been doing a little bit along that line, before receiving your letter.

Mrs. C. M. Strong,
West Allis.

Dear Sir: I am sending herewith my acceptance of membership in the Gardener's Advisory Council. While I am above the age limit that I have seen suggested for service under "conscription" (my 66th year) I am willing to register and let future circumstances determine my "liability."

I shall look to the columns of "Wisconsin Horticulture" for future commands.

H. H. Harris,
Warren, Wis.

Oneida, Wis., June 7, 1917.

Dear Sirs: Enclosed please find my acceptance. I am pleased that I can "do my bit" for my country.

Thanking you for the honor conferred on me I am

Very truly yours,
Rev. A. A. Vissers.

Herewith find my acceptance of your draft. I have never known such a craze for garden making as this spring and much of it by people who have a very hazy idea of what it means. I never realized there could be so many questions asked about the gentle art of gardening as have been fired at us this spring. Certainly there is need of such work as you outline in your letter. This was offered a few days ago by a physician, that in planting potatoes you must always have two eyes—a male and a female—in each hill or no potatoes would form. Replied that thought this advice should be taken with a liberal pinch of salt, then explained the sex of flowers. Wishing you success in your campaign of education, I remain,

Respectfully yours,
J. T. Fitchett,
Janesville.

Dear Sir: I herewith enclose my acceptance to the Gardeners Advisory Council of the Wisconsin Horticultural Society. I have been so busy with office and committee work that I have as yet not found time to work my own garden, but will try and do at least a little in helping others. If I run into anything too big to handle myself I will call on you for assistance.

Hoping that I can "do my bit", I am,

Yours very truly,
A. A. Ullrich,
Watertown, Wis.

"I am very willing to do my bit for the cause."

J. M. Dunlop.

"I surely cannot shirk from such duty."

A. H. Lemke.

This from a member who is nearly blind:

"I shall be very glad to do what I can to be of some service at this time. I am willing to try."

With such a spirit as this we cannot fail.

Tomato Paste.

Blanchard Harper.

The following recipe was kindly sent for Wisconsin Horticulture by Miss Julia Corona, a young Italian girl, 701 Milton St., in Madison.

½ bushel of tomatoes
Salt to taste

Mash the tomatoes and cook until quite soft. Add the salt and rub through a strainer. Spread the pulp on a wide board out in the sun, let stand 15 minutes. Stir and spread again to dry, and continue alternate stirring and drying until the mixture is dry enough to be rolled into a ball. Put the ball into a dish and allow it to stand three or four days. Then divide the mass into portions about the size of an egg. Shape and dip in oil and place the balls in a stone jar. Cover with a piece of cloth (or heavy paper) which has been dipped in oil and salt. To use, dissolve a ball in boiling water and use as cooked tomatoes in soup, macaroni, rice, or any tomato sauce.

TOMATO PASTE.

The following recipe was kindly sent for publication in Wisconsin Horticulture by an Italian woman, Mrs. Sedali, 6 N. Murray St., Madison, through her brother Mr. Tortoresi.

The tomatoes must be thoroughly ripe. Wash them carefully and cut each in half cross wise, then lay them on a grating, grid or wire frame or colender to drain. Sprinkle a handful of salt over the layer, then add more layers, carefully sprinkling each with salt until a sufficient amount has been prepared. Let drain over night. In the morning place the tomatoes without squeezing, in a kettle and boil for two hours, stirring carefully to prevent burning. Cool, then rub the mass little by little carefully through a strainer so that only seeds and skins are left. Take the strained tomato and strain a second time to make it smooth and fine. Now return the tomato to the kettle and slowly boil until it is too thick to run off the board on which it is to be dried. When thick enough take a board (like a bread board), spread the tomato paste on it and then score it with lines to facilitate drainage, then

put it out in the bright sun on a clear bright day. Stir once in fifteen minutes to aid drying. When dry enough put the mass in a plate or pan and let it stand a couple of weeks. After that put in a bowl and mix it thoroughly with sweet oil; when well mixed pack it solidly in an earthen jar and cover with an oiled and salted cloth or paper. Keep the jar in a cool place. In case the paste dries out rapidly pour a little oil over it again.

NOTES ON THE TOMATO PASTE RECIPE.

Mrs. Rorer in her "New Cook Book," p. 307:

"In almost all the Italian shops one can buy tomato conserve in small cans for ten cents. A tablespoonful of this conserve will take the place of many times its bulk in tomatoes. It is, in my own house, used constantly during the summer in the beef extracts for soups, which saves the purchase and keeping of large quantities of meat. * * * for four ounces of macaroni or spaghetti * * * add * * * a teaspoonful of tomato paste dissolved in two or three tablespoonsful of cream or milk."

In the recipes given the American housewife will find an economical method of preserving her tomatoes and yet save the use of self-sealing jars or time. This method enables one to put down in gallon or larger earthen or stone ware crocks an immense amount of tomatoes in an extremely concentrated and portable form. Owing to the present scarcity of oilve oil, a good cottonseed salad oil may be satisfactorily substituted. I have used a well known brand of cottonseed salad oil with perfect satisfaction for several years in preserving pickles, and open bottles of olives and dill pickles, from mould and scum. Pickles have kept well with it in loosely covered jars for nearly three years. In using oil for a seal or preservative, one precaution must be rigidly observed—the container and contents must be kept in a **cool, dark place.** The oil absolutely prevents mould and scum.

It is suggested that housewives having any means of drying fruits and vegetables as described in the June number of Wisconsin Horticulture will prefer to use them rather than face the unprotected exposure to flies and dust in the sun. Enamel ware pans or plates covered by glass could be used for small quantities, which could be packed in jelly glasses instead of large jars; indeed, the writer has been told that the Italians prefer to pack it in small jars rather than large. Of course in using jelly glasses it would be necessary to wrap them in brown paper to prevent the action of light turning the oil rancid.

If considered desirable, this same paste could be spiced and seasoned like American tomato catsup without the vinegar, spices being boiled in the paste after straining, bay leaf, cinnamon, clove, allspice, etc., but with the exception possibly of onion juice and celery seed it seems better to add desired flavors at the time of using.

A Canning Economy.

Blanchard Harper.

Sugar is by no means necessary for the successful canning of summer fruits. Nearly every fruit can be preserved without a particle of sugar, and at the same time preserve more of its delicate flavor and delicious aroma than when sugar is used.

TO CAN WITHOUT SUGAR

Wash carefully, pick over the fruit to have no particle of decay, skin or peel where necessary and also where juice is desirable. Fill the jar with boiling water, after the fruit has been compactly packed in it, put on rubber and cover, partly fasten the cover but do not tighten it, then immerse the jar two-thirds its height in the water bath and boil, counting from when the water commences to boil, from ten minutes for strawberries to twenty-five for pears. Seal immediately and set to cool. If the shrinkage is very great as in strawberries fill the jars up from one or two extra ones and then boil again for five minutes all that have been opened.

When wanted for use open an hour or so before serving and add sugar to taste. If economy is necessary sweetening can be very satisfactorily accomplished with honey, or any good corn syrup in place of sugar.

The writer has kept strawberries canned in this way for three years and when they were opened found them sound and good and the perfume of fresh strawberries seemed to fill the room while the snow of the bleakest winter whirled outside.

Notes.

If every house-keeper has not secured copies of the free bulletin issued by the University of Wisconsin Extension Service, "Canning for Pleasure and Profit," she should send for one at once. Send to the College of Agriculture Extension Service, University of Wisconsin, Madison, Wis.

In drying fruits or vegetables in the sun outdoors be sure to cover them with mosquito netting to keep off flies. It is a good plan to have a lath frame tacked to the ends of the drying board to raise the netting two or three inches above the fruit.

Another wise precaution is to set the legs of the table, or supports in small pans of water in which a little kerosene has been dropped so that ants and caterpillars cannot crawl over and up. Ants will swim through clear water but not any with kerosene in it.

HOME DRYING.

Scarcity of Cans or Glass Jars Makes Drying Desirable.

Dry vegetables and fruits for winter use in tin cans for glass jars for canning are scarce or expensive.

This is the advice of specialists of the United States Department of Agriculture, who recently have studied the possibilities of conserving food to meet war needs in spite of any difficulties that may be experienced in obtaining canning containers. Drying was a well-recognized and successful way of preserving certain foods before canning came into general use, the specialists point out, and modern methods make it still more practicable than formerly, either in the home or by community groups.

METHODS OF DRYING

Three methods of drying have been found by the department specialists to give satisfactory results. These are sun drying, drying by artificial heat, and drying with air blasts, as before an electric fan. Trays for drying by any one of these methods, as well as tray frames for use over stoves or before fans, can be made satisfactorily at home. Frames and trays for use with artificial heat may be purchased complete if desired.

Homemade trays may be made of side and end boards three-fourths of an inch thick and 2 inches wide and bottom boards of lathing spaced one-fourth of an inch. If desired, ¼-inch galvanized wire mesh may be tacked to the side and end boards to form the bottoms of the trays. Frames for use before fans may be made of wood of convenient size. Frames for use with artificial heat should be made of noninflammable material to as great an extent as possible. As many as six trays may be placed one above the other when artificial heat is used. In drying before a fan the number of trays that may be placed one above the other will depend, to a large extent, upon the diameter of the fan. In drying in the sun, trays as described may be used or the products to be dried may be spread on sheets of paper or muslin held in place by weights.

PREPARING PRODUCTS FOR DRYING

Vegetables and fruits will dry better if sliced. They should be cut into slices one-eighth to one-fourth of an inch thick; if thicker, they may not dry thoroughly While drying, the products should be turned or stirred from time to time. Dried products should be packed temporarily for 3 or 4 days and poured each day from one box to another to bring about thorough mixing and so that the whole mass will have a uniform degree of moisture. If during this "conditioning" any pieces of the products are found to be too moist, they should be returned to the trays and dried further. When in condition the products may be packed permanently in tight paper bags, insect-proof paper boxes or cartons, or glass or tin containers.

Notes on the Drying or Dehydration of Fruits and Vegetables.

Blanchard Harper.

An old window screen frame covered with galvanized netting or cheese cloth makes a capital drying tray.

Remember that dried fruits are moisture absorbers and moisture soon becomes mould. Dried fruits and vegetables must be kept dry. After drying thoroughly hang up in a paper bag back of the kitchen stove for a few days then toast a tin box or covered can, while uncovered, in the oven for a few minutes before putting the fruit or vegetables in it and putting on the tight cover.

All solid fruits like apples, peaches, pears, etc., must be cut up and peeled before drying Also all vegetables like carrots, etc.

Sundried fruits are darker than oven dried—many think the flavor of sundried preferable to that of oven dried.

Never leave drying fruit out doors after sundown, or put out before the dew is dried.

Plan to store vegetables that will keep without canning by some of the other processes for preserving such as brining or dehydrating, wrapping in paper in a dark cellar such as onions, squash and cabbage, storing roots in sand, etc.

Send to the Department of Agriculture for Bulletin on Canning in the Home; Dehydrating Fruits and Vegetables in the Home.

Potatoes and Bugs.

Have you met Mrs. Leptinotarsa decemlineata? She wears an orange coat with ten black stripes and is literally the "mother of millions." Most (rational) people say "potato bug", but the entomological sharks insist we should say potato "beetle," while occasionally one may be so far gone toward complete imbecility as to use that Leplino,—stuff in the first line. Farmers and big potato growers know what to do. These few suggestions are

FOR THE BEGINNER

Watch for the first adult beetles: turn over the leaves to find the orange-colored egg clusters. Pick the beetles by hand dropping them into a pan that has a little kerosene in the bottom. Crush the egg clusters. Even with these precautions some will escape and it will be necessary to "spray" in order to poison the young bugs, as these are the ones that do the eating.

Spraying or rather combating the potato beetle with poison is a simple process. Use Paris green **and lime.** A heaping teaspoonful of paris green to a gallon of water is a heavy dose. Get a lump of fresh lime and slake it by pouring water on it drop by drop until it crumbles; add a small handful of this to the Paris-green-water mixture and apply with a whisk broom. Paris green is not soluble in water and will settle quickly in water, therefore keep a wooden paddle in the pail and stir frequently.

Presumably every one knows that Paris green is poinsonous and ought not to be kept in a baking powder can in the pantry. While a small quantity taken internally would prove fatal, there is little danger of absorption through the skin.

Garden Notes From Forest County.

The following timely garden notes are clipped from the Republican of Crandon. It appears that the editor must have an advisory council similar to ours. We seldom find such good advice as given here outside of Oshkosh.

Grounders for Gardens.

Just a few pointers for the amateur war gardeners by some of our prominent citizens:

Carrots should be pulled up and shaved every Saturday and then packed back in the ground. Whiskers on carrots always tickled our throat.—G. H. Dawson.

Beans jump out of the ground quicker if rolled in vaseline before planting.—Egbert Wyman.

Be sure to place a pan of soaked bread near the pea plants. You never can tell when a pea plant wants a lunch and it must be handy for him, otherwise he dies. —A. E. Germer.

A pinch of black pepper sprinkled on the seed will put the "pep" in the young peppers and make them grow to enormous size. —James Paul.

As soon as the cucumbers get large enough to notice things, separate the male ones from the female ones, for if you don't they will spend all their time flirting and won't grow. A wild cucumber is no good.—Len Russell.

Cabbage heads should be fitted with breakfast caps as soon as they begin to develop. The hot sun is hard on their domes.—Martin Georgeson.

Be sure to plant the seed right side up. Many a man has lost a good garden through this little error.—Chas. Taylor.

Hell can be raised in any garden patch with a large-footed dog.—A. E. Karlberg.

Soak the pea seed in kerosene and you will find that the peas won't roll around in the pod while growing.—John Whismat.

Use kind words to the young plants and you will get better results.—Bill Webster.

Babies can be raised in this climate successfully. Forest county always has a good crop.—John Bradley.

A phonograph placed in the potato patch will keep the bugs busy "tangoing" and they won't harm the vines.—John Scory.

Pickled cucumbers can be raised by injecting a little "booze" into each one. This saves the house frau the bother of preserving them.—F. A. Sabrowski.

To raise pumpkins without holes in them take a double bitted ax and mash them down every morning. The hired girl can do this to keep down her weight.—R. J. McMillan.

You can raise good collar buttons by grafting radishes onto tomatoes. It takes a good Forest County "grafter" to do this, though.—John Skinem.

Tomatoes will ripen quick if you let a young "chicken" walk thru the rows in a short skirt. They get that natural blush sooner and hold it longer.—C. A. Moe.

Treat your corn seed with white pop if you want to use it for pop corn.—Frank Hellstrom.

Unless you want a crop of wood peckers don't plant bird seed.—Ted Lutterman.

To raise cobless corn, place Blue Jay corn plasters on each young plant. This will pull the cob out when it develops.—Art. Netzel.

To keep turnips from turning up, pound them on the head when young with a 6 lb. hammer.—Henry Mundt.

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Notes on the Cultivation of Some Staple Vegetables.

BY

W. Saxby Blair, *Superintendent, Experimental Station, Kentville, Nova Scotia*

Carrots and Parsnips.

These should be grown in deep, thoroughly prepared soil of loose open texture, to admit of even root development. This is especially true in the case of parsnips, as a heavy compact soil develops a poorly shaped and rooty parsnip. The ground may be spring or fall manured, ploughed deeply and thoroughly worked.

The seed is sown in the open ground usually before the middle of May, in rows two and one-half feet apart. The carrots may be thinned to two inches apart, and the parsnips four inches. If carrots are spaced too far apart in the row they become too large for table use. The ground should be rich enough and sufficient moisture maintained by frequent cultivation to continue an even growth throughout the season. The root should be kept covered with soil to the top, preventing the top of the root from becoming green, which is objectionable for market carrots.

Beets.

Beets for early use should be started as early as possible on well prepared ground. For winter use seeding toward the last of May, or early in June, is advised, as the beet does not become so large. Any good soil will develop good beets providing a uniform growth is maintained. A checked growth has a tendency to produce fibre.

The seed is sown in rows and the plants thinned to three or four inches apart.

Beans.

Beans do best on a fairly rich soil, and unlike the pea, require a warm situation and warm soil. While the pea will do well on a fairly heavy soil, the bean likes a loose, friable soil for best development. The seed should be sown not earlier than the middle of May. They are usually planted in rows two feet apart, and the seed dropped two to three inches apart and one to one and one-half inches deep.

Successional sowings may be made every two weeks until the middle of July, for the purpose of extending the season into the fall.

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Onions.

Onions do best on a light loamy soil rich in plant food. Light loams can be worked to better advantage than heavier loams and do not dry out so badly during summer. An abundance of available plant food is necessary if profitable crops are to be obtained, and consequently a soil that has been manured for several seasons previously should be selected. The seed is sown in rows on the level ground 12 to 14 inches apart and ¼ inch deep. Seeding should be done as soon in the spring as possible, so that the plants will get well established before the dry, hot weather of summer.

Maintenance tillage is done principally with the hoe, and consists in keeping the surface ground loose around the plants and all weeds from starting.

The falling down and withering of the tops indicates maturity, at which time the onions should be pulled. They are left for a week to dry, after which they may be topped and put into slatted crates, or put into these crates without topping, taken to a shed and allowed to cure for two or three weeks, after which they are ready for market or storage. The advantage of the crate is that a small bulk of onions is together with plenty of ventilation, which is very necessary for proper curing for storage or shipment. They should not be stored in bags or in large piles in bulk. They may be stored in slatted bins arranged one above another, 10 to 12 inches deep. If stored the temperature should be kept as low as possible and the air be dry.

* * *

Cabbage.

Any good garden soil will grow cabbage. A warm, well drained sandy loam, very rich in plant food, is best for early cabbage. A northern exposure is best for late cabbage and a heavy soil may be used. The cabbage is a gross feeder and there is no danger from making the ground too rich. For early cabbage start the seed about March 15. The seedlings are transplanted to two inches apart three weeks later, and will be ready for the open ground early in May. The plants are usually set on the level in rows 30

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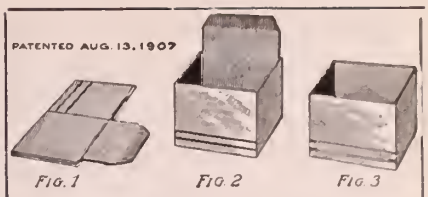

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inches apart and 18 inches apart in the row. Late cabbage are usually grown from seed sown thinly in a cold frame early in May and plants from these are set in the field about the middle of June, spacing the plants in rows 32 inches apart and 20 to 22 inches apart in the row.

The usual maintenance tillage should be given during the summer, and the ground not allowed to become hard and compact or to dry out.

In the storing of late cabbage cut the heads during a dry day and store where good ventilation is possible. The air should be kept dry and the temperature as low as possible. The heads should be placed on slatted shelves far enough apart to store two or three tiers of cabbage, with a good chance for ventilation under the shelves. A confined atmosphere renders cabbage storage impossible.

Cauliflower.

The cauliflower requires a cool, rich loam. A northern exposure is best. Continuous growth is important, and anything that tends to check the plant in any way should be avoided. Dry weather often results in failure, and where watering is possible it may be advisable. For early and late cauliflower start the seed and handle the same as for early and late cabbage, except that more careful attention should be given to detail in the development of plants. Like the cabbage, it takes about seven weeks to develop a stocky, properly hardened-off plant. They may be spaced in the field the same as cabbage.

When the heads are three to four inches in diameter the leaves should be tied together over the head in order to develop a good white flower.

Turnips.

The early turnips may be sown as soon as the ground is fit, in well prepared soil. The Swede turnip should be sown about the last of May. They do best on a good loam retentive of moisture. Continuous growth is necessary to develop good quality. Like most of the root crops, they develop best during the damp, cool fall weather, and the advantage of late seeding is that they make little growth during the hot summer, developing a succulent tissue in the fall. Swede turnips planted early are very liable to be checked in growth during the heat of the summer, developing a root containing much fibre, and lacking in quality.

Corn.

A warm, friable, rich soil should be selected for garden corn. The seed is sown in hills three and one-half feet apart each way, and five plants allowed to develop in a hill. The seed is sown soon after the middle of May. Early and late varieties should be planted to extend the supply of table corn into the fall. As is the case with peas and beans, constant surface cultivation to keep the weeds down and maintain a loose surface mulch is necessary.

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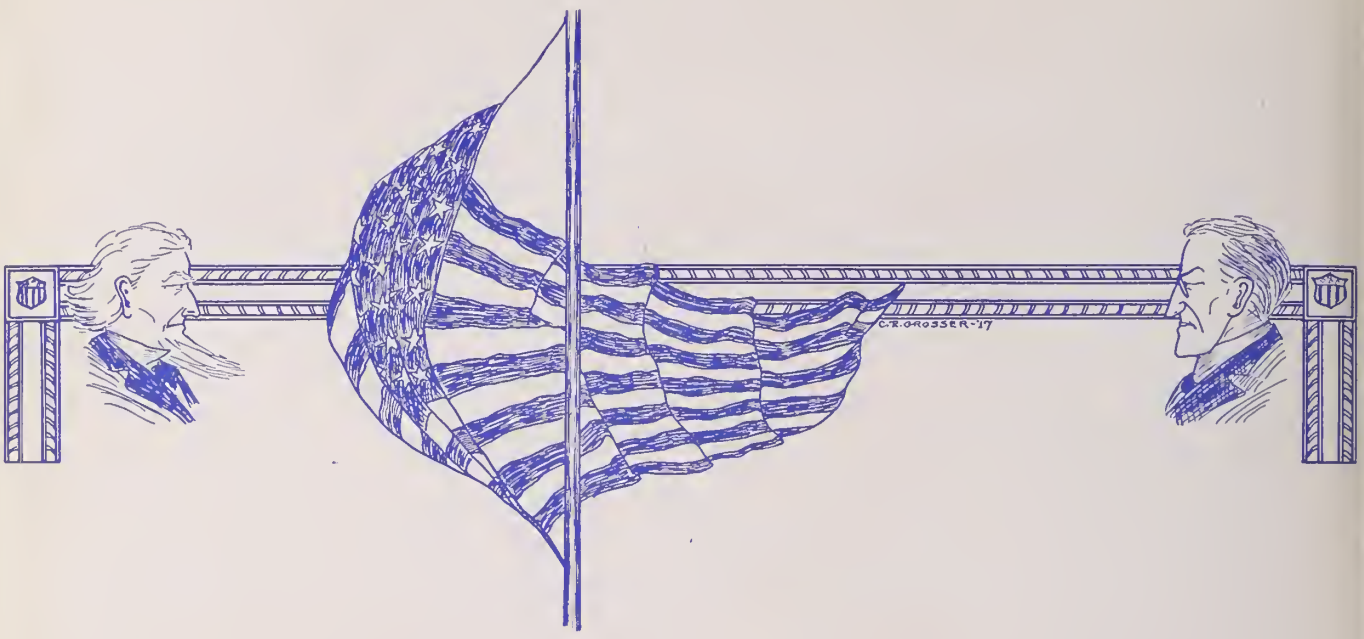

PRESIDENT WILSON'S FLAG DAY ADDRESS, WASHINGTON, JUNE 14th, 1917.

My fellow citizens: We meet to celebrate flag day because this flag which we honor and under which we serve is the emblem of unity, our power, our thought and purpose as a nation. It has no other character than that which we give it from generation to generation. The choices are ours. It floats in majestic silence above the hosts that execute these choices, whether in peace or in war. And yet, though silent, it speaks to us—speaks to us of the past, of the men and women who went before us and of the records they wrote upon it. We celebrate the day of its birth and from its birth until now it has witnessed a great history, has floated high in symbol of great events, of the great plan of life worked out by a great people. We are about to carry it into battle, to lift it where it will draw the fire of our enemies. We are about to bid thousands, hundreds of thousands, it may be millions of our men, the young, the strong, the capable men of the nation to go forth and die beneath it in fields of blood far away, for what? For some unaccustomed thing? For something for which it has never sought the fire before? American armies never before were sent across the sea. Why are they sent now? For some new purpose to which this flag has never been carried before, or for some old familiar, heroic purpose, for which it has seen men, its own men, die on every battle field on which Americans have borne arms since the revolution?

These are questions which must be answered. We are Americans, we in our turn serve America and can serve her with no private purpose. We must use her flag as she has always used it. We are accountable at the bar of history and must plead in entire frankness what purpose we seek to serve.

FORCED INTO WAR.

It is plain enough how we were forced into the war. The extraordinary insults and aggressions of the imperial German government left us no self respecting choice but to take up arms in defense of our rights as a free people and of our honor as a sovereign government. The military masters of Germany denied us the right to be neutral. They filled our unsuspecting communities with vicious spies and conspirators and sought to corrupt the opinion of our people in their own behalf. When they found they could not do that their agents diligently spread sedition amongst us and sought to draw our own citizens from their allegiance and some of these agents were men connected with the official embassy of the German government itself in our own capital. They sought by violence to destroy our industries and arrest our commerce. They tried to incite

Mexico to take up arms against us and to draw Japan into hostile alliance with her and that not by indirection, but by direct suggestion from the foreign office in Berlin. They impudently denied us the use of the high seas and repeatedly executed their threats that they would send to their death any of our people who ventured to approach the coast of Europe. And many of our own people were corrupted. Men began to look upon their own neighbors with suspicion and to wonder in their hot resentment and surprise whether there was any community in which hostile intrigues did not work. What great nation in such circumstances would not have taken up arms?

PEACE DENIED US.

Much as we desired peace it was denied us and not of our own choice. This flag under which we serve would have been dishonored had we withheld our hands.

But that is only part of the story. We know now, as clearly as we knew before we were ourselves engaged that we are not the enemies of the German people and that they are not our enemies. They did not originate or desire this hideous war or wish that we should be drawn into it, and we are vaguely conscious that we are fighting their cause as they will some day see it, as well as our own. They are themselves in the grip of the same sinister power that has now at last stretched its ugly talons out and drawn blood from us.

The whole world is at war because the whole world is in the grip of that power and is trying out the great battle which shall determine whether it is to be brought under its mastery or fling itself free.

GERMANS MASTERS OF AUSTRIA.

The war was begun by the military masters of Germany who proved also to be the masters of Austria-Hungary. These men have never regarded nations as peoples, men, women and children of like blood and frame as themselves, for whom governments existed and in whom governments had their life. They had regarded them merely as serviceable organizations which they could by force or intrigue bend or corrupt to their own purposes. They have regarded the smaller states in particular and the peoples who could be overwhelmed by force as their natural tools and instruments of domination. Their purpose has been long avowed. The statesmen of other nations, to whom that purpose was incredible, paid little attention; regarded what German professors expounded in their class rooms and German writers set forth to the world as the goal of German policy, as rather the dream of minds detached from practical affairs, as preposterous private conceptions of Germany destiny, than as the actual plans of responsible rulers; but the rulers of Germany themselves knew all the while that concrete plans, that well advanced intrigues lay back of what the professors and the writers were saying and were glad to go forward unmolested, filling the thrones of Balkan states with German princes, putting German officers at the service of Turkey to drill her armies and make interest with her government developing plans of sedition and rebellion in India and Egypt, setting their fires in Persia.

AUSTRIA AND SERBIA.

The demands made by Austria upon Serbia were a mere single step in a plan which compassed Europe and Asia from Berlin to Bagdad. They hoped these demands might not arouse Europe, but they meant to press them whether they did or not for they thought themselves ready for the final issue of arms.

Their plan was to throw German military and power and establish power across the very center of Europe and beyond the Mediterranean into the heart of Asia and Austria-Hungary was to be as much their tool and pawn as much as Bulgaria and Turkey or the ponderous states of the east. Austria-Hungary indeed was to become part of the central German empire, absorbed and dominated by the same forces and influences that has ordinarily cemented the German states themselves. The dream had its heart at Berlin. It could have had a heart nowhere else. It rejected the idea of solidarity of race entirely. The choice of peoples played no part in it at all. It contemplated binding together material and political units which could be kept together only by force—Czechs, Maygars, Croat, Serbs, Rumanians, Turks, Armenians—the proud states of Bohemia and Hungary, the stout little commonwealth of the Balkans; the indomitable Turks, the subtle peoples of the east. These peoples did not wish to be united. They earnestly desired to direct their own affairs, would be satisfied only by undisputed indepen-

dence. They could be kept in union only by the presence or constant threat of armed men. They would live under a common power only by sheer compulsion and await the day of revolution. But the German military statesmen had reckoned with all that and were ready to deal with it in their own way.

And they have actually carried the greater part of that amazing plan into execution.

Look how things stand. Austria is at their mercy. It has acted, not upon its own initiative or upon the choice of its own people but at Berlin's dictation, ever since the war began. Its people now desire peace, but cannot have it until leave is granted from Berlin. The so-called central powers are in fact but a single power. Serbia is at its mercy, should its hands be but for a moment freed. Bulgaria has consented to its will and Roumania is overrun. The Turkish armies, which Germans trained, are serving Germany, certainly not themselves and the guns of German warships lying in the harbor at Constantinople remind Turkish statesmen every day that they have no choice but to take their orders from Berlin. From Hamburg to the Persian gulf the net is spread.

GERMANY'S TERMS NOT STATED.

Is it not easy to understand the eagerness for peace that has been manifested from Berlin ever since the snare was set and sprung? Peace, peace, peace, has been the talk of the foreign office for now a year or more, not peace upon her own initiative, but upon the initiative of the nations over which she deems herself to hold the advantage. A little of the talk has been public, but most of it has been private. Through all sorts of channels it has come to me and in all guises, but never with the terms disclosed which the German government would be willing to accept. That government has other valuable pawns besides those I have mentioned. It still holds a valuable part of France, though with slowly relaxing grasp, and practically the whole of Belgium. Its armies close up on Russia and overrun Poland at its will. It cannot go farther, it cannot go back. It wishes to close its bargain before it is too late and it has nothing left to offer for the pound of flesh it will demand.

THINKING ABOUT POWER AT HOME.

The military masters under whom Germany is bleeding see very clearly to what point fate has brought them. If they fall back or are forced back an inch their power both abroad and at home will fall to pieces like a house of cards. It is their power at home they are thinking about now more than their power abroad. It is that power which is trembling at their very feet and deep fear has entered their hearts. They have but one chance to perpetuate their military power or even their controling political influence. If they can secure peace now with the immense advantages still in their hands, which they have up to this point apparently gained, they will have justified themselves before the German people: they will have gained by force what they promised to gain by it—an immense expansion of German power, an immense enlargement of German industrial and commercial opportunity. Their prestige will be secure and with their prestige their political power. If they fail their people will thrust them aside; a government accountable to the people themselves will be set up in Germany as it has in England, the United States, France and in all the great countries of modern time except Germany.

The facts are patent to all the world, and nowhere are they more plainly seen than in the United States, where we are accustomed to deal with facts and not with sophistries: and the great fact that stands out above all the rest is that this is a people's war, a war for freedom and justice and self-government among all the nations of the world, a war to make the world safe for the peoples who live upon it and have made it their own, the German people themselves included; and that with us rests the choice to break through all these hypocrisies and patent cheats and masks of brute force and help set the world free, or else stand aside and let it be dominated by a long age through by sheer weight of arms and the arbitrary choices of self-constituted masters, by the nation which can maintain the biggest armies and the most irresistible armaments—a power to which the world has afforded no parallel and in the face of which political freedom must wither and perish.

"For us there is but one choice. We have made it. Woe be to the man or group of men that seeks to stand in our way in this day of high resolution when every principle we hold dearest is to be vindicated and made secure for the salvation of the nations. We are ready to plead at the bar of history, and our flag shall wear a new luster. Once more we shall make good with our lives and fortunes the great faith to which we were born and a new glory shall shine in the face of our people."

Why Do We Fight Germany?

Address by Franklin K. Lane, Secretary of the Interior, on June 4, 1917, before the Home Club of the Interior Department, Washington, D. C.

Tomorrow is Registration day. It is the duty of all, their legal as well as their patriotic duty, to register if within the class called. There are some who have not clearly seen the reason for that call. To these I would speak a word.

Why are we fighting Germany? The brief answer is that ours is a war of self-defense. We did not wish to fight Germany. She made the attack upon us; not on our shores, but on our ships, our lives, our rights, our future. For two years and more we held to a neutrality that made us apologists for things which outraged man's common sense of fair play and humanity. At each new offense —the invasion of Belgium, the killing of civilian Belgians, the attacks on Scarborough and other defenseless towns, the laying of mines in neutral waters, the fencing off of the seas—and on and on through the months we said: "This is war,—archaic, uncivilized war, but war! All rules have been thrown away; all nobility; man has come down to the primitive brute. And while we can not justify we will not intervene. It is not our war!"

Then why are we in? Because we could not keep out. The invasion of Belgium, which opened the war, led to the invasion of the United States by slow, steady, logical steps. Our sympathies evolved into a conviction of self-interest. Our love of fair play ripened into alarm at our own peril.

We talked in the language and in the spirit of good faith and sincerity, as honest men should talk until we discovered that our talk was construed as cowardice. And Mexico was called upon to cow us. We talked as men would talk who cared alone for peace and the advancement of their own material interests, until we discovered that we were thought to be a nation of mere money makers, devoid of all character,—until indeed we were told that we could not walk the highways of the world without permission of a Prussian soldier, that our ships might not sail without wearing a striped uniform of humiliation upon a narrow path of national subservience. We talked as men talk who hope for honest agreement, not for war, until we found that the treaty torn to pieces at Liege was but the symbol of a policy that made agreements worthless against a purpose that knew no word but success.

And so we came into this war for ourselves. It is a war to save America—to preserve self-respect, to justify our right to live as we have lived, not as some one else wishes us to live. In the name of Freedom we challenge with ships and men, money and an undaunted spirit, that word, "Verboten" which Germany has written upon the sea and upon the land. For America is not the name of so much territory. It is a living spirit, born in travail, grown in the rough school of bitter experiences, a living spirit which has purpose and pride and conscience.—knows why it wishes to live and to what end, knows how it comes to be respected of the world, and hopes to retain that respect by living on with the light of Lincoln's love of man and its old and new testament. It is more precious that this America should live than that we Americans should live. And this America as we now see has been challenged from the first of this war by the strong arm of a power that has no sympathy with our purpose, and will not hesitate to destroy us if the law we respect, the rights that are to us sacred, or the spirit that we have, stand across her set will to make this world bow before her policies, backed by her organized and scientific military system. The world of Christ —a neglected but not a rejected Christ—has come again face to face with the world of Mahomet, who willed to win by Force.

With this background of history and in this sense, then we fight Germany—

Because of Belgium—invaded, outraged, enslaved, impoverished Belgium. We can not forget Liege, Louvian and Cardinal Mercier. Translated into terms of American history these names stand for Bunker Hill, Lexington and Patrick Henry.

Because of France—invaded, desecrated France, a million of whose heroic sons have died to save the land of Lafayette. Glorious golden France, the preserver of the arts, the land of noble spirit. The first land to follow our lead into Republican liberty.

Because of England—from whom came the laws, traditions, standards of life and inherent love of liberty which we call Anglo-Saxon Civilization. We defeated her once upon the land and once upon the sea. But Australia, New Zealand, Africa and Canada are free because of what we did. And they are with us in the fight for the freedom of the seas.

Because of Russia—New Rus-

sia. She must not be overwhelmed now! Not now, surely, when she is just born into freedom. Her peasants must have their chance: they must go to school to Washington, to Jefferson and to Lincoln, until they know their way about in this new, strange world, of Government by the Popular Will.

Because of other Peoples, with their rising hope that the world may be freed from Government by the Soldier.

We are fighting Germany because she sought to terrorize us and then to fool us. We could not believe that Germany would do what she said she would do upon the seas.

We still hear the piteous cries of children coming up out of the sea where the Lusitania went down. And Germany has never asked forgiveness of the world!

We saw the Sussex sunk, crowded with the sons and daughters of neutral nations.

We saw ship after ship sent to the bottom—ships of mercy bound out of America for the Belgian starving—ships carrying the Red Cross and laden with the wounded of all nations,—ships carrying food and clothing to friendly, harmless, terrorized peoples,—ships flying the Stars and Stripes—sent to the bottom hundreds of miles from shore, manned by American seamen, murdered against all law without warning.

We believed Germany's promise that she would respect the neutral flag and the rights of neutrals, and we held our anger and outrage in check. But now we see that she was holding us off with fair promises until she could build her huge fleet of submarines. For when Spring came she blew her promise into the air, just as at the beginning she had torn up that "scrap of paper." Then we saw clearly that there was but one law for Germany, her will to rule.

We are fighting Germany because she violated our confidence. Paid German spies filled our cities. Officials of her government, received as the guests of this nation, lived with us to bribe and terrorize, defying our law and the law of nations.

We are fighting Germany because while we were yet her friends—the only great power that still held hands-off—she sent the Zimmerman note, calling to her aid Mexico, our southern neighbor, and hoping to lure Japan, our western neighbor, into war against this nation of Peace.

The nation that would do these things proclaims the gospel that government has no conscience. And this doctrine cannot live, or else Democracy must die!

We are fighting Germany because in this war Feudalism is making its last stand against on-coming Democracy. We see it now. This is a war against an old spirit, an ancient, outworn spirit. It is a war **against** Feudalism—the right of the castle on the hill to rule the village below. It is a war **for** Democracy—the right of all to be their own masters. Let Germany be feudal if she will! But she must not spread her system over a world that has outgrown it. Feudalism plus Science, thirteenth century plus twentieth,—this is the religion of the mistaken Germany that has linked itself with the Turk,—that has, too, adopted the method of Mahomet. "The State has no conscience." "The State can do no wrong." With the spirit of the fanatic she believes this gospel and that it is her duty to spread it by Force. With poison gas that makes living a hell, with submarines that sneak through the seas to slyly murder non-combatants, with dirigibles that bombard men and women while they sleep, with a perfected system of terrorization that the modern world first heard of when German troops entered China,—German Feudalism is making war upon mankind. Let this old Spirit of Evil have its way and no man will live in America without paying toll to it, in manhood and in money. This Spirit might demand Canada from a defeated, navyless England, and then our dream of peace on the north would be at an end. We would live, as France has lived for forty years, in haunting terror.

America speaks for the world in fighting Germany. Mark on a map those countries which are Germany's allies, and you will mark but four, running from the Baltic through Austria and Bulgaria to Turkey. All the other nations, the whole globe around, are in arms against her or are unable to move. There is deep meaning in this. We fight with the world for an honest world, in which nations keep their word, for a world in which nations do not live by swagger or by threat, for a world in which men think of the ways in which they can conquer the common cruelties of nature instead of inventing more horrible cruelties to inflict upon the spirit and body of man, for a world in which the ambition or the philosophy of a few shall not make miserable all mankind, for a world in which the man is held more precious than the machine, the system or the state.

The Crimes of Germany.

The world is not hostile to Germany because it is unwilling that Germany should have a fair chance in the world, or because it had in the beginning any special love for the enemies of Germany. When the war began it was a fair field and no favor with most of the neutrals. Germany has alienated a dozen nations by the faithlessness, the brutality, the arrogant contempt for the rights of others, that its government has displayed at every stage of the war. It has been its own worst enemy; it has written its own condemnation in the eyes of the world; it has done its best to convince everyone that German domination in the affairs of mankind would be a calamity that civilization must avert, even if it perish in the attempt.

The violation of Belgium and the looting and burning of Belgian cities and French villages; the horror of the Luisitania and the atrocity of the submarine warfare, in which the murder of noncombatants and neutrals is cynically planned and coolly carried out; the spiteful destruction of priceless memorials of the piety and artistic feeling of the human race; the invention of the Zeppelin raid and the poison-gas attack; the offenses—some of them nameless—against the liberty and the honor of French and Belgian noncombatants; the wanton and wicked desolation of the evacuated country of the enemy; the deliberate sinking of hospital ships; the Armenian massacres, which the Kaiser could have stopped by raising his finger—those things have one by one brought about a universal hardening of the world's heart against the government that can order such deeds.

"What's the Task?"

We long hoped that the charges against the Germans were exaggerated through passion and prejudice. Here and there single accusations may be without basis, but the great outstanding facts are well known. Our own diplomatic representatives resident abroad have told us enough in their official reports to convince us that Germany makes war in defiance of the laws of decency and humanity that other nations recognize; that it considers the slow and painful progress that civilization has made as a thing of no moment, a thing to be ruthlessly sacrificed if it restricts German ambition. The Kaiser once ordered his soldiers to fight as the hordes of Attila fought and to make the name of German dreaded as that of the Hun was dreaded in the ancient days. They have obeyed him; but is it necessary to remind them that Attila and his hordes were not beloved among the civilized people of those early centuries? Neither can any nation that fashions itself upon such a model expect to prosper in the affections of mankind.—*Youth's Companion.*

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Our Country.

This issue of your paper is a radical departure from our established policy and the editor asks that it be received in the spirit in which it is sent.

I want you to forget gardens and gardening for just one day, July 4th, 1917.

Lay aside all thought of work, of business and devote the day to study and reflection.

Take down your history book from the shelf, a school book will do, and read again of our struggle for freedom through all the years from 1776 to now.

Read of Washington and Lafayette, of Perry, Lincoln, Grant and Lee.

Read again the story of Dewey at Manila Bay and then reflect for a time on what it all means.

It may be a revelation to most of us. The privileges we enjoy, liberty of thought, liberty of action, all the blessings of a free land have been accepted by us as of course without thought of the sacrifices of those who have gone before us. Men have fought, suffered and died in defense of things that we esteem so lightly. We are free not because of anything we have done ourselves, but because of what others have done for us.

"What do I owe to my country and how can I pay the debt?"

Will you on our National Day ask yourself this question? The answer to that will be the answer to the other question, "why are we at war?"

Frederic Cranefield, Editor.

What is the War About?

Ask those high in authority and you will be told,—"To Make the World Safe for Democracy," or again; "To Destroy Autocracy." These are fine, high sounding phrases and when analyzed in the cold light of reason are found to be true. But the man in the street and on the farm has little time and less desire to analyze and philosophize on the why and wherefore of it. He wants a plain and concise answer in terms that will satisfy his reason and his conscience.

In my opinion we are at war with Germany because that particular brand of savagery known as German "kultur" does not suit us at all. We don't like it a little bit, it's a garment that won't fit a free people no matter how we may alter it.

The general indictment I make against Germany is her "kultur," a bill of particulars of which will be found in another column.

England and France are also countries of free peoples and as neither one can conveniently use "kultur" they are at war against it. They have fought for three years and have been unable so far to subdue this hideous monster.

Now lest this "kultur" be imposed on us we have set about to finish the job. That we will finish it there is no doubt. It may take three years more, millions of men and billions of money, but finish it we will and in a satisfactory manner.—F. C.

Pacifists.

Pacifists may be divided for convenience into three groups: In the first we may place that chief high priest of the cult Bryan and a few others whose sole aim is publicity for themselves. This class amounts to only a small fraction of the whole.

Second, cowards; third, traitors, about equally divided.

Pacifists, since the declaration of war, accomplish their aims mainly through certain congressmen.

Congressmen easily fall into two classes, statesmen and men-afraid-of-their-jobs. The ratio is about 1 to 99. Place the figures to suit yourself. Of one class we have nine from Wisconsin. Time may show that we have a third class, viz., traitors. It so happened at the beginning of the Civil War when a dozen or more Congressmen when impeached.

Pacifists and cowardly congressmen are dangerous, somewhat more so than rattlesnakes because the poison of pacifism is a slow poison.—F. C.

Slow Acting Poison.

A few days before the declaration of war the State Department at Washington disclosed one of the most astounding acts of treachery ever known among civilized people.

This, in connection with other disclosures, plainly showed that for two years or more a well organized force of poison-experts had been at work throughout the length and breadth of the land. Read the extracts from the speech of our loyal senator in another column so that you may under-

stand how our minds were poisoned.

Now is there anyone among us so trusting as to believe that this widespread, carefully organized and well paid espionage (poison) gang suddenly quit work on April 6th? Has any one asked you this question: "Why should we send our troops to France?" If so, try to remember who first asked you this question and trace it back of the questioner, **if you can.**

Frederic Cranefield.

A Few Examples of German "Kultur."

The Lusitania, 1,300 lives lost including 130 American men, women and children.

The murder of Captain Fryatt, commander of an English merchant ship. Captain Fryatt acted in defense of the lives and property in his charge by attempting to ram the submarine which attacked him. He was taken to Germany and shot to death.

The cowardly murder of Edith Cavell, a Red Cross nurse in Belgium, the foulest act in the history of civilized peoples.

The shooting of civilians in Belgium.

Zeppelin raids on unprotected towns in England, killing women and children by hundreds.

The recent air raid on London.

These are a few of the things coming our way unless we send troops to France, send them in overwhelming numbers and send them quickly.

"I pledge allegiance to the Flag,
And to the Republic for which it stands;
One nation, indivisible,
With Liberty and Justice for all."

Lincoln's Gettysburg Address.

Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting-place for those who here gave their lives that the nation might live. It is altogether fitting and proper that we should do this. But in a larger sense, we cannot dedicate, we cannot consecrate—we cannot hallow—this ground. The brave men, living and dead, who struggled here have consecrated it, far above our poor power to add to or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave us the last full measure of devotion—that we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom and that government of the people, by the people, for the people, shall not perish from the earth.

The Story of An American.

This is a story of a real American—and a testimonial for Uncle Sam. Four years ago Richard Prokop, 18 years old, was living with his parents in Bohemia. When he was seven years old, a young man in his native village came to America, land of freedom and opportunity, and the boy had read over many times the letters which came back from Antigo, Wisconsin.

The day he became 18 he, too, started for America, and because he knew nothing of this country except that Antigo, Wisconsin, was the place where his friend had found his fortune, he purchased a ticket for that city when he landed in New York.

He had $12 when he arrived in the Wisconsin city. He found a job at once, with the Antigo Gas Co. Then he worked six months in a logging camp. He then turned to farm work.

Three years ago he went to Prairie du Sac, in Sauk county, and when the president fixed June 5 as the day for registration he was working on a farm near that city.

Decides to Enlist

He placed his name on the roll of honor, and went back to his work, but that did not seem to be enough. He thought it over that night, and the next morning notified his employer that he was going to enlist.

He came to Madison on June 6 and enlisted in the regular army for the war. He asked for time to go back to Prairie du Sac and arrange his affairs, and this was granted.

When he returned to Madison today he brought with him a draft for $650, his savings for four years. And he kept $50 for himself, and

bought $600 worth of liberty bonds. The money in the bank paid him 4 per cent. The liberty bonds pay him 3½, but he had decided to do a real job of paying his debt to America.

He left today for Jefferson barracks and from there he goes to the front.

Leaves a Sweetheart.

There is another side to the story. He is leaving a sweetheart here to wait until he comes back, and he knows that may never be.

Put these items, then, to the credit side of the ledger when you foot up Uncle Sam's account with Richard Prokop, foreign born:

He is going to the front to give his life, if need be.

He is lending his savings to Uncle Sam.

He is leaving a sweetheart whom he may never see again.

When he left the offices of the state council of defense every man in the room shook his hand and stood at attention as he walked through the door, on his way to the front. As he walked through the capitol park he gave his testimonial for Uncle Sam.

Tells of Debt to Country.

"This country has been good to me," he said. "I want to do what I can. I came to this country a boy, without friends and without money. The people were kind to me. I saved more money in four years than I could save in 20 in the village where I was born. I think this is the greatest country on earth, and I am proud to fight for it. This country gave me my $650. I am glad to let the country use it as long as it needs it. I don't talk about America like some young men do. I don't care about the high cost of living. I love my country, and wherever they tell me to go, I'll go. I did not enlist for five years. I enlisted for the war."

This is the true story of Richard Prokop, foreign born, which is worth while. How does it appeal to you?—*Madison Democrat.*

Disloyal Few Give Bad Name to Wisconsin.

By Ellis B. Usher.

Milwaukee, June 16.—The registration for war was so satisfactory as to surprise some people who never learn that certain facts govern results in Wisconsin. Such people do not learn that the only reason Wisconsin's loyalty has ever been questioned is that she has been noisily and persistently misrepresented by the German-American alliance; by a few treasonable newspapers, and worse than all by her men in public life, a majority of whom have unfortunately been selected by the combination of sinister interests partially enumerated above.

* * * * * * *

When Milwaukee gave 10,000 plurality for Wilson it ought to have been a sufficient notice to the country that German sympathizers are in hopeless minority here. If a vote were taken here today the result would be a big, clean majority, and the state would be for Wilson. It is for Wilson.

Today the opponents of Wilson are reduced to the sympathizers with Germany, and a few futile and pusillanimous pacifists, who, though contemptible, are dangerous, as are all men who skulk in the bushes and shoot braver men in the back. All these pacifist elements accomplish is to show a disposition to hamstring the government and endanger, so far as they can, the lives of their loyal neighbors by inviting violence.

"And if you are ever tempted to say a word or do a thing that shall put a bar between you and your family, your home, and your country, pray God in his mercy to take you that instant home to his own Heaven. Think of your home, boy; write and read, and talk about it. Let it be nearer and nearer to your thought, the farther you have to travel from it; and rush back to it when you are free, as that poor black slave is doing now. And for your country, boy," and the words rattled in his throat, "and for that flag," and he pointed to the ship, "never dream a dream but of serving her as she bids you, though the service carry you through a thousand terrors. No matter what happens to you, no matter who flatters you or who abuses you, never look at another flag. Remember, that behind all these men you have to do with,—behind officers, and government, and people even—there is the Country Herself, your Country, and that you belong to Her as you belong to your own mother."

The Man Without a Country.

Lincoln's Letter to Mrs. Bixby.

My Dear Madam:—

I have been shown in the files of the War Department a statement of the Adjutant-General of Massachusetts that you are the mother of five sons who died gloriously on the field of battle. I feel how weak and fruitless must be any word of mine which should attempt to beguile you from the grief of a loss so overwhelming. But I cannot refrain from tendering you the consolation that may

be found in the thanks of the Republic they died to save. I pray that our Heavenly Father may assuage the anguish of your bereavement and leave you only the cherished memory of the loved and lost, and the solemn pride that must be yours to have laid so costly a sacrifice upon the altar of Freedom.

Yours very respectfully,
ABRAHAM LINCOLN.

What Do I Owe to My Country?

Prof. Volney G. Barnes, Principal Madison High School.

The above question is one that every man, woman and child should be asking of themselves, for our country is in trouble. We as an American people have not had to think of ourselves as Americans. We are very used to considering the needs of our home, our community, and our state, but the United States has been but a name to most of us. We look upon our union as something remote from us, and now in the time of stress we do not seem to realize that our country is in trouble, we cannot feel that our home is in danger. But if we do not rise above our community, and state, to a loyal support of the United States, our home is in danger. Every man, woman and child should hear our country's call for we can all serve, each in a way he is best fitted to serve. Some will have to go to the front, but the large majority of us must stay at home. We are apt to feel that if we have enlisted, or if sufficient number from our community have enlisted, that our country's call for help has been answered. That is not true, however, for unless we do more than send our boys to the front we have not done our duty. There are a thousand and one things that must be done and done well in order that our country may use to the best advantage her fighting unit. Many of us are doing our part. We are working in factories, shops and on farms; we are distributing food and growing food. But how many of us realize the vital need for doing these things? How many of us are doing them because of the wages we receive? How many of us are doing them because we need to support our families, with no thought that in doing this work we are performing a vital service for our country. Every man should go at his work with a grim determination that in as far as lies in his power his country shall have every ounce of his strength, every bit of his excess resources. There should be no holding back, no reservations. Very few of us are doing all that we can. We grumble at the call for funds for the support of the Army Y. M. C. A., Red Cross, and Liberty Loan. Some of us seem to feel that we are being imposed upon when we should rather say: "All that I have, all that I am, is yours America. Yes, even my life if that is necessary." Give me only enough to keep strength in my body that I may work harder for you. We need to wake up, Americans, our country calls.

The Greatest Need in America.

House of Representatives,
Washington, D. C., June 21, 1917.
My Dear Mr. Cranefield:

I have yours of the 14th instant but I have been so busy upon matters of legislation that I have been compelled to neglect my correspondence. I am afraid that my compliance with your request may be too late for use by you. I am, however, enclosing a brief expression which you may use if you desire.

Very sincerely,
I. L. Lenroot.

"The greatest need in America today is a realization that the war in which we are now engaged is not primarily to secure liberty for other peoples, but to preserve our own liberty. If German autocracy is to prevail in this world war, then democracy in the United States is doomed. It is the preservation of our Republic that we fight for. We can do it with less sacrifice of blood and resources now with our allies fighting with us than we can later if they are defeated and we are compelled to fight alone. The shortest road to peace is the enthusiastic support of the American peolpe in this war. We are in war not for England, not for France, but for America."

False Accusations of Disloyalty.

Arthur F. Belitz, Madison.

There is no anguish greater than the gnawing pain resulting from a false accusation or a false suspicion. And there is no public grievance more pentrating to a loyal citizen than to have his loyalty questioned and impugned without cause,—especially so by one to whom, on American ideals of duty, that citizen owes allegiance, respect and veneration.

The record of the German-American element of our population in the building of our nation leaves no room for doubt as to their loyalty, and does not furnish cause to question it now. Yet, we have been assailed (1) by crude and boisterous express accusations of disloyalty; (2) by equally cutting insinuations

and implied accusations of disloyalty clothed in boisterous demands to prove our loyalty; and (3) by the failure of the president to expressly refute the misconstruction of his messages to congress, which have been read by many of our German-American fellow-citizens as carrying the veiled motive to segregate them for the purpose of determining their loyalty.

I cannot believe the president intended at any time to classify our citizenship on the basis of nationality descent; I believe his messages have been misconstrued. America is the land of broad minds and big souls; the land where every stranger is your friend,—when you get to know him. Class distinctions on the ground of ancestry, as upon any other ground, violate the broad spirit that makes our country great and strong. Lincoln and the civil war established for all time the fundamental American ideal that we are all one country and one people, each citizen a sovereign in his own right regardless of his ancestry or any other thing. And it is our sovereign right to assert that the president is loyal to that ideal, as it is our sovereign right and duty to be loyal to the president and country, and back him to the last ditch in his hour of need. That is the German-American sentiment as I know it.

I hate to use the term *German*-American; but the necessity of self-defense compels us to employ it. The distinction has been forced upon us by the need of emphasizing and combatting the fact that we have been unjustly segregated because of birth alone. A kicked dog is bound to growl. We have been called hyphenates and traitors without the slightest warrant; and it makes it hard for us to restrain our expressions, always, to the absolute and perfect ideal of loyalty that is expected of us, and which I know it is our endeavor to maintain. We are not saints, because we cannot be any more than any other class of citizens. But when it comes to the real test it will be found that German-Americans are loyal, as they have always been. The registration records prove it. The bond subscriptions prove it. And only today the papers bring this little item: "No response has been received by the Red Cross war council with so much genuine enthusiasm as that from the German-Americans throughout the country".

Verboten!

Come, let's forget these little nationality bickerings,—before many months have rolled by we shall have cause to cultivate the American spirit of mutual forbearance and good will. We are up against a hard proposition. We cannot hope to win this war unless we hyphenate all the people and make them one compound whole, according to the verdict of the civil war,—one-third of it German-American. We cannot win the war if we continue to gratuitously offend and ostracize

the German-American loyalty that fed the starving soldiers at Valley Forge. Our armies need German-American stamina and pep that licked Robert E. Lee, on his own admission. We should not make war on each other, but go ahead with it a united people against a common enemy.

German Planes Swoop Down Upon Congested East Side District of London.

London, June 13.—The casualties in the German air raid over London and vicinity, it is officially announced according to the latest police report, numbered 97 killed, and 437 wounded. The killed comprised 55 men, 16 women and 26 children. The injured comprised 223 men, 122 women and 94 children. **No damage of a military or of a naval nature was done.**

The German squadron consisted of about 15 machines, and the downtown section of London was their chief objective. Many bombs fell in the east end. Ten children were killed in a street, and 50 injured in one instance. * * *

Smash Two Railway Coaches

Terrible scenes were witnessed during the air raid at a railway station, where two bombs were dropped. Luckily they missed the busy portion of the station, but struck a train at the far end of the platform, fairly full of passengers, waiting to start. The two foremost carriages were destroyed. One bomb hit the train squarely, one carriage caught fire. Several passengers were killed, and others, badly injured and unable to escape, were incinerated. It is believed that 24 passengers were killed or injured in this train.

Pitiable Scenes at School

The bombing of a school house furnished one of the most pitiable scenes in the whole raid. The bomb struck the roof squarely, cutting clean through and passing through two classrooms, one above the other, killing some children but sparing the majority. It finally exploded with terrific force in a room on the ground floor where there were 64 little children, from 5 to 7 years of age, ten of whom were killed outright, and all the others more or less injured.

The room was 36x 24 feet, and the force of the explosion in such a small area was terrific. Most of the ceiling was brought down and the furniture shattered into splinters. Some of the babies had arms and legs torn off, others were shockingly lacerated, some stunned and others buried in the wreckage.

The room was filled with the screams and moans of the tiny sufferers, many of whom were crying for their mothers. Helpers who rushed in from the outside, found four women teachers, wonderfully self-possessed, although covered with blood, giving what help was possible to their little charges. Many of the children were lying limp and helpless across the shattered desks, bleeding from terrible wounds. Others were writhing in pain, and some bodies were unrecognizable.

Press Dispatch.

"I didn't raise my boy to be a Coward."

War With Germany.

Extracts from speech of Hon. Paul O. Husting of Wisconsin in the Senate of the United States, Wednesday, April 4th, 1917.

The Question at Issue.

The question with which we are now confronted is not whether we want war; the question is "Shall we suffer war to be made upon us without defending ouselves?" We are not the aggressor. We are not attacking anybody, but we are being attacked. Our ships are being attacked, our citizens and our ships carrying our flag are being sent to the bottom of the sea. In other and even more sinister ways our country has been warred upon for a period of more than two years by agents in the pay of a foreign Government.

Germany's Hostile Change of Front.

Again and again our Government has warned Germany that any repetition of the offense of which we complain would result not only in the severance of diplomatic relations, but that we would hold her to "strict accountability" and would omit no steps necessary to defend our rights, or words to that effect.

With these solemn words ringing in her ears, with full knowledge of what her actions meant, repudiating her solemn promise made to us, repudiating the laws of nations and of humanity, the laws of God and man, in defiance of the nations of the world and the opinions of mankind, in defiance of the United States, of her President, and of her people, Germany again threatened to resume and has resumed her ruthless, unrestrained, and barbarous submarine warfare. She is not afraid to do wrong. Shall this great Nation be afraid to do right and to maintain its own rights? Shall we condone or indorse another country's wrong against us and repudiate our country's rights? No; we will not do that! We must not do that! Our honor, our rights, our lives—nay, our very safety and welfare will not permit us to do that. No nation can long endure which permits its rights to be deliberately, wantonly, defiantly, and insultingly trampled upon. No nation can long endure or should endure which fails or refuses to defend the lives of its defenders!

If Germany Wins.

If Germany wins this war she "will bestride this narrow world like a colossus." She will be all powerful, all

dominating. If our great Nation shrinks now from asserting and maintaining our honor and our rights, will we not, when Germany shall have swept her enemies from land and sea (in the event that she be successful), shrink from engaging this colossus should she then still continue to bar us from the present sea zone of death or when, perchance, it shall be her pleasure to bar us from all the seas and oceans of the world?

A Distinction.

So there is a very broad distinction between the things that England has done against us and those which Germany has done against us. The difference is as great as that between human life and money, as great as that between property rights and human rights, and all the sophistry, all the refinement of arguments, all the specious pleading can not change the fact, and fact it is that Germany has destroyed lives, has committed murder upon our citizens and piracy upon the high seas. The wrongs that we have suffered at Great Britain's hands can and will be compensated for in money.

German Intrigues in America.

Mr. President, the conduct of Germany toward this Government during the past two years, aye, for many years prior to the beginning of the war, was not the conduct of a friend. I had it stated to me on pretty fair authority that about 25 years ago Germany changed her attitude toward her immigrants. Formerly she looked upon them as backsliders, as people that were not worthy of the consideration of the German Government, but since that time many persons leaving Germany have still kept in touch with the old country. It has been claimed that thus a sphere of German influence has been formed in the United States. I do not know whether this is true or not. There are some things that seem to bear out the charge, or at least lend color to it; but one thing is sure, and that is since the war in Europe began a German ambassador, German agencies, and German money have carried on a campaign of intrigue and conspiracy calculated to divide the people of this country into racial groups, calculated to array one group of citizens against another, one church against another, race against race, and conspiracies have been formed to commit acts of violence against property and the law and order of this country, calculated, through the medium of numerous societies, leagues, alliances, conferences, newspapers, churches, and other organizations, by means of propaganda and agitation, to prejudice our people against their own Government and to implant in them mistrust, hatred, and contempt for the President, his advisers, and Congress—in short, of the United States Government. Newspapers have been established, others have been subsidized. The Germany Embassy here at Washington behind its cloak of privilege, encouraged, if indeed it did not actually inspire and direct, this movement which was aimed at the very integrity and sovereignty of this country. An ambassador should carry on the business of his Government through the medium of our State Department; but Germany's ambassador talked through the newspapers and over the heads of our authorities and tried to influence public opinion against this Government through American newspapers, and held conferences with Members of Congress and with sympathetic citizens of the country, with heads of societies and alliances. This ambassador presumed to advise, through the medium of advertisements, in the newspapers what American citizens should or should not do. This ambassador revealed secrets of the State Department to newspaper men under pledge of secrecy not to divulge the source of their information. This embassador disbursed money to newspapers carrying on German propaganda—newspapers which villified and foully slandered the heads of our Government. Other agents of the German Government—Von Papen, Von Igel, and the like—were detected and apprehended while attempting, pursuant to a conspiracy, to destroy property, public and private, and to commit other acts of violence against the law and order and decency in this country. Newspapers, some printed in the German language and some in the English language, in one way or another were persuaded to take up a campaign of infamy against the President and this Government that is without precedent in the history of this country.

According to these newspapers in every matter of controversy which we had with Germany America has been in the wrong. As a fitting corollary to this Germany has invariably been in the right. When our crisis was on with Germany last May and it was a question as to whether we were to back down or whether Germany was to back down, *they flooded us with a quarter of a million telegrams* in which, together with these newspapers and sympathizers generally, they unhesitatingly, boldly, and brazenly asked their country to back down. They thought the idea absurd that Germany should back down because, forsooth, she had told us that she would not back down. They unhesitatingly counseled their Government to abandon a right in order that a foreign country might enjoy a wrong.

On the eve of the late adjournment, when the President, in a last desperate effort to stave off war, asked for authority to arm ships, this chorus loudly protested on the ground that Congress alone had the power and that it should not delegate such powers to the President. Now, when it seems that action by Congress is inevitable and apparently not in accordance with their desires, a deafening chorus again wells up, charging that Congress is about to declare war contrary to the sentiment of the American people. The only instance where a kind or friendly word has been heard in favor of the President and the Government in this entire affair was when the President was endeavoring to cooperate with Germany to bring about a peace without victory. Here, of course, when it appeared that the President was endeavoring to do something that appeared to be in Germany's interest it was promptly approved.

Not only this but the President has been cartooned, lampooned, vilified, and denounced at every turn, and Germany and her chancellor, and her undersecretary, Zimmerman, have been lauded, have been praised, have been glorified, and have been approved at every turn. Nothing was too infamous to say about the President. Nothing too good to say about the Kaiser and his Government. These same men, newspapers, societies, and organizations have brazenly proclaimed themselves as the exponents of true Americanism. They say they love their country; that those for whom they speak would die for their country. But they argue that does not mean that you should necessarily support the Government. Then they charge that this Government is not a true representative of America; that the President is a traitor and a tool of England; that he is betraying this Government into the hands of Great Britain and that he is a hypocrite and a puppet that responds obediently when King George pulls the string.

(Continued on p. 179)

For Freedom, Not For Hatred.

In 1776 we fought for our freedom from England and again in 1812, but we have not **hated** England.

In 1861 we fought that all men under the Flag, black and white, should be free, but we do not hate the South.

In 1898 we fought Spain that the Cubans might be free, but we do not hate Spain.

In 1917 we are fighting that all the people of the world shall be free, but we will not hate Germany.

We are fighting for freedom, not for revenge or hatred. For forty years German officers at dinners and banquets have drunk to "The Day," the day when they might wreak their hatred and vengeance on England. The German poet Lissauer, in 1914, sounded the note. Here it is:

LISSAUER'S HYMN OF HATE.

French and Russian they matter not,
A blow for a blow, and a shot for a shot;
We love them not, we hate them not,
We hold the Weichsel and Vosgesgate,
We have but one and only hate,
We love as one, we hate as one,
We have one foe and one alone.
He is known to you all, he is known to you all,
He crouches behind the dark gray flood,
Full of envy, of rage, of craft, of gall,
Cut off by waves that are thicker than blood.
Come let us stand at the Judgment place,
An oath to swear to, face to face,
An oath of bronze no wind can shake,
An oath for our sons and their sons to take.
Come, hear the word, repeat the word.
Throughout the Fatherland make it heard.
We will never forgo our hate,
We have all but a single hate.
We love as one, we hate as one,
We have one foe, and one alone—
England!

In the captain's mess, in the banquet hall,
Sat feasting the officers, one and all,
Like a saber-blow, like a swing of a sail,
One seized his glass held high to hail;
Sharp-snapped like the stroke of a rudder's play,
Spoke three words only: "To the Day!"
Whose glass this fate?
They had all but a single hate.
Who was thus known?
They had one foe, and one alone—
England!

Take you the folk of the earth in pay,
With bars of gold your ramparts lay,
Bedeck the ocean with bow on bow,
Ye reckon well, but not well enough now,
French and Russian, they matter not,
A blow for a blow, a shot for a shot,
We fight the battle with bronze and steel,
And the time that is coming Peace will seal.
You will hate with a lasting hate,
We will never forgo our hate.
Hate by water and hate by land,
Hate of the head and hate of the hand,
Hate of the hammer and hate of the crown,
Hate of seventy millions, choking down.
We love as one, we hate as one,
We have one foe, and one alone—
England!

War With Germany.

(Continued from p. 178)

Therefore they insist that it is patriotic to oppose and obstruct and defeat the Government. Yet they love America they say. Beware of one who while pretending to be your friend finds nothing that is good in you, but only that which is bad—who commends you in nothing but damns you in everything. Friendship is made of a different stuff than this and love of country reveals and manifests itself in other ways than this.

BATTLE-HYMN OF THE REPUBLIC,

JULIA WARD HOWE.

Mine eyes have seen the glory of the coming of the Lord:
He is trampling out the vintage where the grapes of wrath are stored;
He hath loosed the fateful lightning of his terrible swift sword:
His truth is marching on.

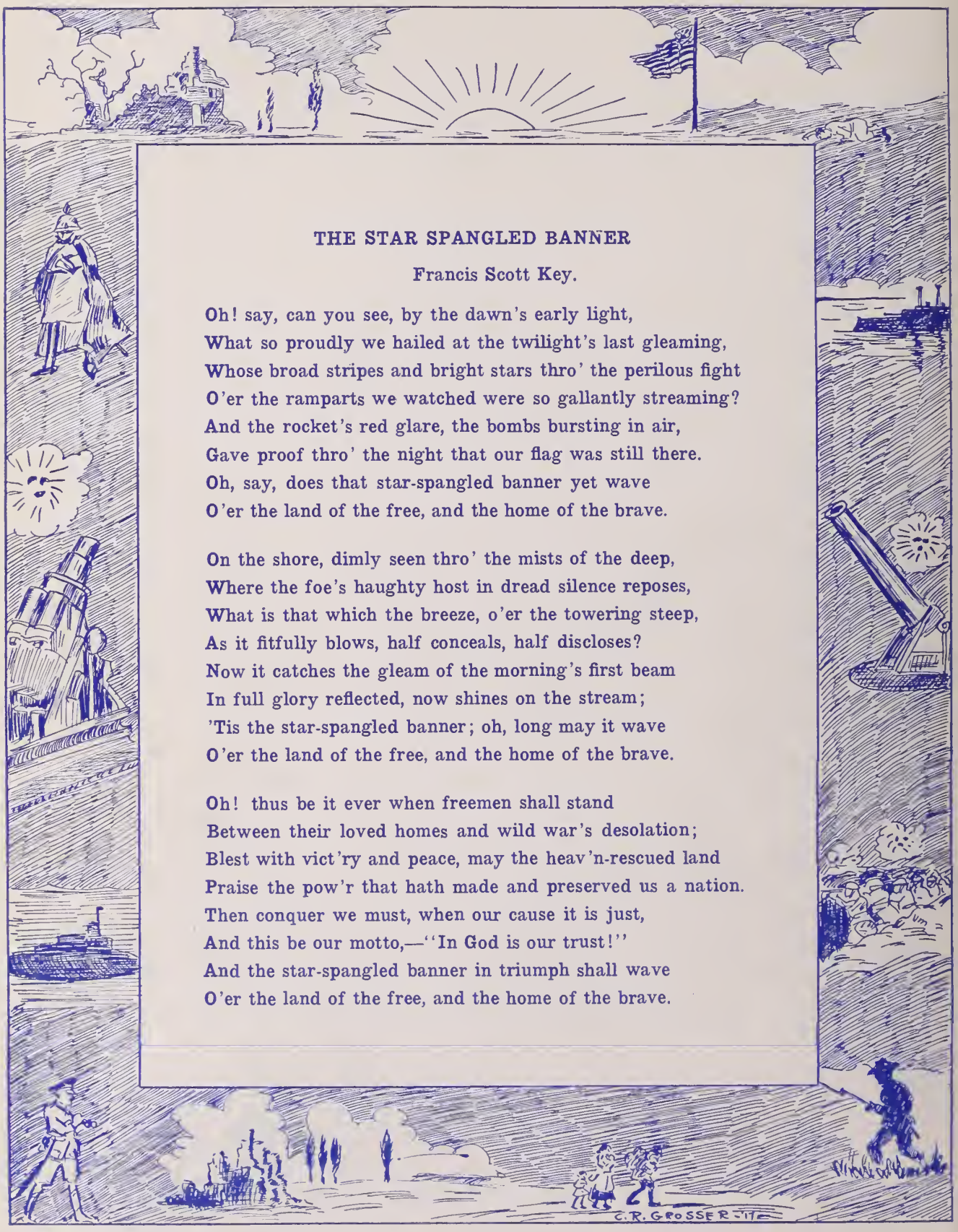
I have seen Him in the watch-fires of a hundred circling camps;
They have builded Him an altar in the evening dews and damps;
I can read His righteous sentence by the dim and flaring lamps.
His day is marching on.

I have read a fiery gospel writ in burnished rows of steel:
"As ye deal with my contemners, so with you my grace shall deal;
Let the Hero born of woman, crush the serpent with his heel,
Since God is marching on."

He hath sounded forth the trumpet that shall never call retreat;
He is sifting out the hearts of men before his judgment-seat:
Oh! be swift, my soul, to answer him!
Be jubilant, my feet!
Our God is marching on.

In the beauty of the lilies Christ was born across the sea,
With a glory in His bosom that transfigures you and me:
As he died to make men holy, let us die to make men free,
While God is marching on.

Breathes there the man with soul so dead,
Who never to himself hath said: —
"This is my own, my native land!"
Whose heart hath ne'er within him burned,
As home his footsteps he hath turned
From wandering on a foregn strand?
If such there breathe, go, mark him well;
For him no minstrel raptures swell;
High though his titles, proud his name,
Boundless his wealth as wish can claim;
Despite those titles, power and pelf,
The wretch concentered all in self,
Living, shall forfeit fair renown,
And, doubly dying, shall go down
To the vile dust, from whence he sprung,
Unwept, unhonored, and unsung.
"The Lay of the Last Minstrel."



THE STAR SPANGLED BANNER

Francis Scott Key.

Oh! say, can you see, by the dawn's early light,
What so proudly we hailed at the twilight's last gleaming,
Whose broad stripes and bright stars thro' the perilous fight
O'er the ramparts we watched were so gallantly streaming?
And the rocket's red glare, the bombs bursting in air,
Gave proof thro' the night that our flag was still there.
Oh, say, does that star-spangled banner yet wave
O'er the land of the free, and the home of the brave.

On the shore, dimly seen thro' the mists of the deep,
Where the foe's haughty host in dread silence reposes,
What is that which the breeze, o'er the towering steep,
As it fitfully blows, half conceals, half discloses?
Now it catches the gleam of the morning's first beam
In full glory reflected, now shines on the stream;
'Tis the star-spangled banner; oh, long may it wave
O'er the land of the free, and the home of the brave.

Oh! thus be it ever when freemen shall stand
Between their loved homes and wild war's desolation;
Blest with vict'ry and peace, may the heav'n-rescued land
Praise the pow'r that hath made and preserved us a nation.
Then conquer we must, when our cause it is just,
And this be our motto,—"In God is our trust!"
And the star-spangled banner in triumph shall wave
O'er the land of the free, and the home of the brave.

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PENNSYLVANIA ANEMONE AS USED IN PARK PLANTING: A COMMON WISCONSIN WILD FLOWER.

Uncle Sam's Latest Vegetable Preserver.

Blanchard Harper

When I was a child living in Japan, one of my vivid memories is of standing by to watch the wives of the men servants working with what we children called their "pickles." Their "pickles" were egg plants about the size of a hen's egg, cucumbers full grown with the seeds scooped out and the skins on, and "*daikon*" the large Japanese white radish—I never knew the preliminaries, but the "pickles" as I saw them were packed *in saw dust* in wooden buckets and covered with salt brine. After fermentation for some time, they were taken out as wanted, carefully washed in several waters, then sliced and served at the meals consisting mainly of boiled rice and fish. Dietetically the "pickles" added just the elements needed by the other components of the meal for a balanced ration—altho I did not understand that or think of it for many years after—

The process is a good one from the stand point of economy in the conservation of foods—economy not only of utensils but labor, fuel and containers, for by this method, stoneware jars or wooden or fibre pails of several gallons capacity can be utilized in place of the now high priced glass jars, and tin cans. We are so accustomed to regard bacteria as a bugaboo, that few of us realize that the beneficent bacteria far out number the malignant. It is the utilizing of some of these beneficent germs that forms the basis of this process.

The Dept. of Chemistry of the U. S. Dept. of Agriculture has been experimenting on processes for preserving vegetables by fermentation in brine solutions of various kinds. The first account of the work described the use of a mixture of corn-meal and water which had been allowed to sour to produce lactic acid which is the preserving element. Later experiments showed the corn-meal to be unnecessary and unwise. The process can not be unreservedly recommended for all sorts and conditions of vegetables and the vegetables are acid when removed—just as sauer-kraut and dill pickles are acid, but it is useful for vegetables like young beets, carrots, cabbage, cucumbers, etc., not sufficiently ripened or mature to keep in a root cellar or packed in sand for the winter.

The following is from a preliminary description of the process sent out in typewritten form by the U. S. Department of Agriculture.

How to Preserve Vegetables by Fermentation

The fermentation method for the preservation of vegetables should be of value to those who like acid foods, and lack receptacles for their canned products. The vegetables are not cooked, but are put down in a salt brine in any non-metal water-tight container, and are then sealed up with paraffin, or otherwise made air tight. Under this treatment lactic acid develops, and this acid, the value of which as a food has been recognized, acts as a preservative. The Bureau of Chemistry has found this method most successful in preserving cucumbers, chayotes, beets, and string beans.

Wash the vegetables, if necessary, this of course being most important in the case of beets. In the case of string beans, the strings should first be removed. Pack the vegetables into a clean, water-tight barrel, keg, or crock, avoiding the use of tubs made of yellow or pitch pine which would impart a disagreeable flavor to the product. (On the bottom of the barrel place a layer of dill and a handful of mixed spice. Add another layer of dill and another handful of spice when the barrel is half full, and when almost full a third layer. If a keg or crock is used the amount of dill and spice can be reduced in proportion to the size of the receptacle.) If beets or string beans are to be served like fresh vegetables, no spice should be added. When the container has been filled within a few inches of the top add a layer of covering material—beet tops, or grape leaves—about an inch thick. This layer protects the vegetables beneath against any spoilage occurring in the surface of the fermenting material. Press it down with a clean board cover weighted with bricks or stone. Do not, however, use a cover of yellow or pitch pine or weights of limestone or sandstone. The acid produced by the fermentation acts upon lime.

Make a brine by adding 1 pound of salt to 10 quarts of water. To each 15 quarts of brine so made add 1 quart of vinegar. Add sufficient brine to cover the material and allow it to ferment. The length of time required for fermentation depends upon the temperature. In a warm place only from 5 days to a week may be necessary; in a cool cellar it may take from 3 to 4 weeks.

During the first stages of fermentation there is always more or less bubbling and foaming of the brine. After this ceases, a thin film appears, spreading rapidly over the whole surface and developing quickly into a heavy folded membrane. This scum is a growth of yeast-like organisms which feed upon the acid formed by fermenta-

tion. If allowed to grow undisturbed, it will eventually destroy all the acid and the fermented material will spoil. As free oxygen of the air is absolutely necessary for its growth, the exclusion of air from the surface of the brine will entirely prevent the formation of this scum. There are three feasible methods of excluding the air.

1. Use an oil like cottonseed oil, which floats on the surface and effectually prevents air from reaching the brine. Care should, of course, be taken to select oil free from any odor or taste other than that possessed by a good grade. Brine with a layer of paraffin oil or cottonseed oil one-half inch thick on the surface will keep indefinitely. The only objection to the use of a liquid oil is the difficulty of removing it from the preserved vegetables.

2. Cover the surface with very hot melted paraffin. Paraffin, sufficiently hot to make the brine boil when poured upon it, forms a smooth even layer before hardening. Upon solidifying it effects an air-tight seal. Paraffin is easier to handle than liquid oil, and does not remain on the fermented vegetables when they are removed from the receptacle. Furthermore, paraffin can be used over and over, thus cutting down expense. If it becomes dirty it can be heated to a high temperature and strained through cheesecloth or a thin layer of cotton. The only disadvantage in using paraffin lies in the fact that gas developing below the layer will break the seal. If the paraffin breaks, it should be removed, remelted, and replaced.

Before sealing containers with paraffin, set them where they will not be disturbed until the contents are to be used. Any attempt to move them from one place to another may break the paraffin seal, thus necessitating resealing. If the containers are not opened until cold weather, the vegetables should keep without spoiling until they are used up. If opened in warm weather they have a tendency to spoil rapidly unless the paraffin is reheated and the container resealed immediately.

3. Pack the container as full as possible and then replace the head. In using this method for the fermentation of beets, cucumbers, chayotes or string beans, allow the product to stand for 24 to 48 hours after board and weights have been added. During this period most of the gas first formed escapes. The boards and weights are then removed and the container headed up tight. Bore a one-inch hole in the head and fill the barrel full with brine, leaving no air space. Let stand until bubbling has ceased. Add more brine if possible, and plug the vent tight. If the barrel does not leak, fermented products put up in this manner will keep indefinitely. The use of this method in repacking fermented product serves to economize space and prevent spoilage of the brine and upper layer of the product. The vegetables may be transferred after bubbling has ceased from the original containers to kegs and barrels which are then headed up as has just been described.

If cottonseed oil or paraffin is used to cover the brine, it is advisable to so adjust the amount of brine and the weights on the cover that the brine comes up to, but not over, the cover. Thus only the brine exposed between the cover and sides need be oiled or paraffined, thereby saving covering material.

Only those vegetables which cannot be kept by storing or early ones not available later in the season should be preserved. Late beets, for example, can be kept better in the cellar.

Sauerkraut

The method of putting up cabbage by fermentation has several advantages over the present process of making sauerkraut. The belief that only late or fall cabbage is suitable for making sauerkraut has been disproved by experiments conducted in the Bureau. If properly handled excellent sauerkraut can be made from cabbage maturing at any season of the year. Be careful, however, to use only mature, sound cabbage, keep everything scrupulously clean during the whole process, and follow exactly the directions given for treating the surface of the brine when fermentation has ceased.

Remove the outer green leaves of the cabbage, just as if it were being prepared for boiling, as well as all decayed or bruised leaves. A finer looking product is secured when the cores are removed. If no instrument for coring the cabbage is at hand, quarter the head, and slice off the core of each section. Shred the cabbage either in one of the shredding machines manufactured for this purpose, or by cutting it into thin slices with a large knife. Pack the shredded cabbage at once into a clean, water-tight receptacle, as a cider or wine barrel, keg, or tub. Four or five-gallon receptacles, as earthenware crocks, are recommended for small families where larger quantities might spoil before the sauerkraut could be used up, after opening the container.

As the cabbage is packed into the barrel or crock, add salt in the

Continued on p. 201

The Apple Grading Law

CHAPTER 492, LAWS OF 1917.

AN ACT to create section 1668m of the statutes, relating to standard grades for apples grown in the state, and providing a penalty.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. A new section is added to the statutes to read: Section 1668m. 1. The standard grades for apples grown in this state when packed in closed packages shall be as follows:

First: "Wisconsin Standard Fancy" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, uniform in size, of good color for the variety, and which are free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing. "Uniform in Size" shall be construed to mean that apples contained in any one package shall not vary more than one-half inch in diameter.

Second: "Wisconsin Standard A" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, of not less than fifty per centum of good color for the variety, and which are practically free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing.

Third: "Wisconsin Standard B" shall consist of hand-picked, properly packed apples of one variety, which are well grown and practically free from insect injury and fungous disease; provided, that apples having healed over insect punctures, small scab or blotch infections, fruit spots, or other defects which, taken singly or collectively, do not materially deform or discolor the fruit or injure its keeping quality, shall be admitted to this grade.

Fourth: "Wisconsin Unclassified" shall consist of apples which do not conform to the foregoing specifications of grade, or which though conforming are not branded in accordance therewith; provided, that if more than ten per centum of the apples are badly deformed or badly discolored by scab, blotch, insect injury or other defects, the package containing them shall be marked "Culls" in addition to the other marks or brands required by this section.

2. In the interpretation of this section a tolerance of five per centum below the standard shall be allowed in the Standard Fancy grade, ten per centum in the Standard A grade, and fifteen per centum in the Standard B grade; provided that not more than half the foregoing tolerance values shall be allowed on any single grade specification or defect. Such tolerance shall apply to size, color, and other grade specifications and shall be computed by counting or weighing the specimens which are judged to be below the standard for the grade in any respect, and those which are found to be smaller than the minimum size marked on the package.

3. In all of the grades specified in this section, the apples included in the face or shown surface shall fairly represent the size and quality of the apples in the package.

4. Every closed package containing apples grown in the state of Wisconsin which is sold, offered or exposed for sale, packed for sale, or shipped for sale, shall bear upon the outside of one end in plain letters or figures, or both, the name and address of the person by whose authority the apples were packed, the true name of the variety, the grade of the apples therein contained when packed or repacked, and the minimum size or the numerical count of the fruit in the package, provided that apples packed in boxes may be branded Extra Fancy in lieu of Standard Fancy; Fancy in lieu of Standard A; "C" in lieu of Standard B. If the true name of the variety is not known to the packer or the person by whose authority the apples are packed or branded, then such variety shall be designated as "unknown." Every package of apples which is repacked shall bear the name and address of the person by whose authority it is repacked. The letters and figures used in marking or branding closed packages of apples under the provisions of this section shall be of a size not less than thirty-six point Gothic.

5. The marks and brands prescribed in this section may be accompanied by any additional marks or brands which are not inconsistent with or do not in any way obscure the marks and brands required by this act. Apples packed and branded in accordance with the United States apple grading law approved August third, nineteen hundred and twelve, shall be exempt from the provisions of this section.

6. The minimum size of the fruit in all grades, shall be determined by taking the transverse diamter of the smallest fruit in the package. Minimum sizes shall be stated in variations of one-fourth of an inch, as two inches, two and one-fourth inches, two and one-half

inches, two and three-fourths inches, and so on.

7. No person may pack for sale, ship for sale, offer or consign for sale, or sell, in closed packages, any apples grown in this state which are not graded, packed and marked or branded in accordance with the provisions of this section and the regulations made hereunder, or closed packages of apples bearing any false statement, design, or device regarding such apples within the meaning of this act.

8. Any person who violates any of the provisions of this section, or of the regulations promulgated hereunder, shall be deemed guilty of a misdemeanor and upon conviction thereof, shall be punished by a fine of not more than fifty dollars for the first offense and not more than one hundred dollars for each subsequent offense; provided, that no person shall be prosecuted under this section who can establish by satisfactory evidence that no part of the packing or branding of the apples concerned was done by him or under his authority and that he had no knowledge that they were not packed and branded in accordance with said provisions and said regulations.

9. The provisions of this section shall not apply to apples in closed packages which are held, stored or shipped to storage within the state, until the same are packed for sale, offered or consigned for sale, or shipped for sale.

10. The word "person" as used herein shall be construed to include individuals, corporations, partnerships and associations. The act, omission or failure of any official or employe of any person, when such official or employe is acting within the scope of his employement or office, shall, in every case, be deemed also the act, omission or failure of the person, as well as of the official or employe. The words "closed package" shall mean a box, barrel or other package, the contents of which cannot be easily inspected when such package is closed.

11. The enforcement of the provisions of this section shall be vested in the commissioner of Agriculture, and his officers, employes and agents are authorized to enter upon the premises of any person within this state for the purpose of inspecting packages of apples and securing evidence of violation of this section, and the said commissioner of Agriculture is hereby authorized and empowered to make, promulgate, and enforce such regulations as may be necessary for interpreting the grade specifications prescribed in this section, and for otherwise enforcing its provisions; provided, however, that any grades or classes of apples packed in closed packages, or any requirements for marking closed packages containing apples, mandatory as applying to interstate commerce which may hereafter be established by the authority of the congress of the United States shall forthwith, as far as applicable, be established and promulgated by the commissioner of Agriculture as the official grades, classes and marks for apples packed in closed packages in the state of Wisconsin.

Section 2. This act shall take effect upon passage and publication.

Approved June 26, 1917.

COPY LAW.

Uncle Sam's Latest Vegetable Preserver.

Continued from p. 199

proportion of 1 pound of salt to 40 pounds of cabbage, distributing it evenly throughout the cabbage. Experiments have shown that the addition of approximately 2½ pounds of salt to each hundred pounds of shredded cabbage gives the best flavor to the kraut. When the barrel or crock is nearly full, pound down the cabbage as firmly as possible and cover with a clean board cover. It is advisable, though not essential, to place a clean cloth over the cabbage before the cover is put into place. The salt soon extracts a certain amount of juice from the cabbage, so that a weight of clean bricks or stone sufficient to bring the brine well above the board cover should be added.

Now set aside the barrel or crock and allow fermentation to proceed undisturbed. In cold weather, or where the sauerkraut is placed in a cool cellar, three or five weeks may be required to complete the process. In a warm room it takes only from ten days to two weeks. As soon as fermentation starts, a foam appears on the surface of the brine. This is followed by a film which develops into a heavy scum, if allowed to remain. Skim off this scum as often as it forms—every day, if necessary. It feeds upon the acid in the brine and, if allowed to grow undisturbed, soon destroys both brine and kraut. As soon as the gas bubbles cease to arise, the scum, if any has formed, should be removed, and a layer of hot melted paraffin about ¼ to ½ inch thick poured upon the brine. If paraffin is not added, the scum develops very rapidly during warm weather and soon destroys the acid of the brine and the sauerkraut beneath. If the sauerkraut is made during the fall and stored in a cool place, it is not necessary to add the paraffin, for the low temperature will prevent decomposition.

Salt Method for Preserving Vegetables

The following paragraphs from the Chicago Tribune speak for themselves. A letter from Dr. George Leininger, manager of the Dunning infirmary, brings to mind a third method that is practicable and convenient. While he has applied it to Swiss chard only, it is just as feasible in the preservation of any succulent green. We quote from his note as follows: "I have successfully put up Swiss chard for winter use by salting it down like kraut. It does not ferment like kraut, but remains fresh as if it came out of the garden. Any jar or keg may be used for salting it down with an ordinary loose cover and weight on it."

Mr. Joseph J. Budling, who has experimented with beans and most other vegetables by salting in this manner, advises pounding enough, while filling, to create a liquid to cover, testing 15 to 20 degrees salometer test. However, these technicalities are important only to large producers. The salient point is that the vegetable must be kept under its own brine and weighted down with a heavy stone or other weight. Many housewives prefer beans salted to those canned. One recently told of finding a crock full of salted string beans which had been misplaced three years before in her cellar, they were found in perfect condition and eaten with satisfaction by the family. For the instruction sheets issued at the lectures in Conservation of Foods given at the University of Wisconsin for the delegates from the county defense committees instructions for packing beans and corn in salt were as follows:

"Corn should be blanched (3 min.) and then cut from the cob. Beans should be left whole, but prepared for cooking and blanched 3 min. Sprinkle a layer of salt in the bottom of the jar, then a layer of beans or corn, then salt and repeat until the jar is full. The top layer should be salt. Place a plate over the top of the beans or corn, and press down well. It is not necessary that the jar should be filled at one time. More may be added from time to time as the foods ripen or are available. When ready to use, soak the beans or corn over night and then prepare as if fresh."

Cucumbers for pickles—My grandmother's way. Summer being a busy time, my grandmother left the making up of pickles until winter and prepared for it as follows: The small cucumbers were gathered daily and packed in layers of salt in a stone crock. As brine formed a plate was placed over them and weighted with a small bag about four or five inches square of salt so that the edges of the bag reached the brine and moistened the salt enough to replace the salt dissolved by the juice of the cucumbers. When wanted, freshen the cucumbers, and using a little alum to make them brittle, finish them according to any favored recipe. In the case of very small tender cucumbers the brine should be weaker—use less salt.

Cucumber Salad for Winter

Pare and slice cucumbers as for use at the table. Pare and slice also one fourth as much of tender onions. Sprinkle layers of cucumbers and onions with salt. Let drain over night. If too much salt has been used rinse quickly in fresh water in the morning. Pack in a freshly scalded crock, and pour over enough vinegar which has been diluted to taste, scalded and cooled, to cover the cucumbers. Seal with olive or cotton seed oil.

Home Canning

(Mrs. N. A. Rasmussen, Oshkosh.)

(Editor's Note: This excellent article on home canning was unfortunately mislaid and could not be found in time for an earlier issue.)

There are three important features to be taken into consideration when canning fruits and vegetables, viz. cooking utensils, fruit or vegetables and receptacles for the finished product.

As to utensils, one may have as elaborate an outfit as the pocket book will afford or as there may be room for in the cupboard but a simple, inexpensive and economical supply will suffice for the average family canning, pickling and jelly making. This should consist of at least two granite dishes of about 16 quart capacity either pans or kettles as one desires, a colander, a wire strainer, a sieve of some description, a masher or ricer, can funnel, several large spoons, a slicer, a wire basket, a cherry pitter, a food chopper, an apple corer, a paring knife, a bottle brush and a jelly bag. This may seem rather an extensive list but the actual cost of the whole outfit is not more than $6.00 and most of these articles may be used in performing many other household duties.

Now about the fruit: First it must be in good condition if good results are expected. This does not necessarily imply that nothing but fancy fruit can be used for all sorts and grades may be utilized to excellent advantage if good judgment is generously administered.

The various stages of maturity should be considered. Fruit somewhat green is best for jellies, fruit perfectly ripe tho firm is ideal for canning and fruit which is very ripe or past its prime makes jams and butters creditable to any repast.

A great deal might be said about home canning, in fact volumes of recipes etc., have been written but a few general principles may be of some benefit to the inexperienced.

The fruit should be prepared, so far as possible, most convenient for the consumer. Apples, pears and pine apples should be cored; cherries, plums, etc., pitted and the stones should be removed from the peaches thus eliminating many an embarassing situation as well as a worm, have the fruit trees not been properly sprayed. If one desires the fruit left whole, such as peaches and pears a syrup of sugar and water should be made and the fruit put into the boiling syrup,

Of course one may use the "boiling in the can" method if more effective results are desired. There is no set rule as to the amount of sugar necessary this must be governed by one's personal taste. Some fruits may be canned entirely without sugar, but no fruit should require more than a pound of sugar to a quart of canned fruit. The cans should be thoroughly sterilized immediately before they are used and slightly warm while fruit is being put in and no silver fork, no aluminum plate nor other foolish fancy is necessary to prevent the can from cracking.

Canned fruit should be stored in a dark cupboard or if this is not convenient it is well to fasten a piece of paper around each individual can, thus preserving the color of the fruit, this is particularly true of strawberries. Each can should be labeled as it is sometimes difficult to tell the black raspberries from the black berries and blue berries, and should you wish John to bring a can of plums he would not favor you with pickled beets.

The Housewife's Opportunity

One way American women may serve their country.

The United States is at war with a nation which has the best organized and equipped army the world has ever seen. Back of that army the people of Germany are likewise organized to a degree that to us is scarcely conceivable.

Statesmen and military experts have announced in no uncertain terms that from now on the war is to be a struggle for supremacy in the production, conservation and distribution of food, rather than a contest of arms.

On the advice of the President and his councillors, hundreds of thousands of acres of land in the United States never before cultivated are being used to swell the production of food.

The experienced gardener is redoubling his efforts, while a multitude of men, women and children, who have hitherto paid little or no attention to the tilling of the soil, are now planting and cultivating.

The result of this unprecedented activity cannot fail to be the production of vegetables, berries and fruit in vast quantities. These cannot be consumed as fast as they are gathered. On the women of the land will fall the tremendous task of storing up this great excess. PRESERVE, DRY and CAN: Let these be the watchwords of the women of our country! Over-production, without the ability to keep, will avail us nothing.

The list of garden and orchard products which cannot be successfully stored for future use is surprisingly small. Neither is the cost of preparation nearly as great as is generally presumed. The cost of sugar is now so great that I apprehend many women despair of being able to put up berries and fruits as they have heretofore. This cause of alarm is not well founded. The underlying secret of permanent canning and preserving does not rest on the necessity of the presence of syrup, but on the destruction of every bacteria in the food to be put up and in the can and cover, by sterilization and sealing of the container absolutely against the air.

A can which is not securely sealed, or whose contents has not been thoroughly freed from the presence of bacteria, represents nothing but lost materials and wasted energies.

At the request of the Wisconsin State Horticultural Society, I prepared samples of fifty-seven kinds of apple products capable of being put up for later use. Several others might have been added, however, I felt that the apple had been sufficienlty vindicated as a worthy competitor in the field of advertised foods.

With clean, sound fruit, clean jars, thorough sterilization and tight sealing, there is no reason why the women of the land may not save hundreds of thousands of bushels of apples that every year go to waste throughout the country. Like care in the preparation of other fruits and berries may be also be the means of similar saving, the value and volume of which will be a revelation.

Thus, as I have demonstrated, the apple may be used to form the bulk of many products in combination with other more expensive fruits and by this means affording a great variety of flavors at far less cost than where the other fruits are used exclusively.

Mary Parker Morgan.

Wisconsin Horticulture

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SUMMER MEETING

The summer meeting, Aug. 22nd and 23rd, really needs no advertising, merely a reminder. There are the usual good reasons why we should assemble at the summer meeting and this year one other reason: We must "take stock."

Our Society has been one of the impelling forces in the war garden movement and we may be needed again next year. Therefore let us get together, look over this year's work and see how we can improve on it.

PROGRAM
SUMMER MEETING
STATE HORTICULTURAL SOCIETY

Public Library Building, Oshkosh, Aug. 22 and 23, 1917

Wednesday 10:00 A. M.

The Keys of Oshkosh_____Hon. John Mulva, Mayor
How Have the Horticulturists Heeded the Battle Cry of "Feed Em?"
The War Gardens of Milwauke and Vicinity____Prof. C. V. Holsinger
The Oshkosh Garden Movement_____Miss Fannie K. Medbury
What We Accomplished in Lake Geneva_____A. Martini
Members from other cities will be prepared to make brief reports.
Garden Irrigation_____L. Herziger

Wednesday Afternoon, 2:30 P. M.

Progress in Insect Control_____Prof. H. F. Wilson, Univ. of Wis.
Progress in Control of Plant Diseases__Prof. L. R. Jones, Univ. of Wis.
Winter Storage of Vegetables_____Irvng Smith, Ashland
The Apple Grading Law_____Geo. W. Porter, Univ. of Wis.

Wednesday Evening

Color in the Home Grounds_____Prof. F. A. Aust, Univ. of Wis.

Illustrated Lecture

Athern Hotel Headquarters for Delegates and Members.

The latter part of August is always selected for the summer meeting as that time comes as near being a slack season as the fruit grower or gardener ever finds, just after small fruit and cherries and just before apples. For the amateur it is also a slack season and he should be on hand this year without fail.

Oshkosh will take the best of care of us both days and no one will regret a two day stay. A glance at the announcement shows the program proper will be finished the first day and the second day we will be at the mercy of members of the Oshkosh Society.

We will see gardens and gardens without end also lakes and rivers, cool spots for luncheons and the strange spectacle of a big excursion steamer crossing corn fields and pastures.

The State Fair

The State Fair premium list is out and should be read carefully by every member who has fruit or flowers fit for exhibit. The premiums are better than ever and ought to bring out a fine exhibit. The regular exhibitors will be on hand as usual but will the amateur and small grower be represented? Remember the lists are open to all and the plate or peck of apples from a small orchard often stands a better chance of winning than that shown by the big grower.

The State Horticultural Society will have an exhibit as usual and its officers will use their best efforts, as usual, to make the Fair a success. You are invited, not only to attend the fair but to participate in making the fair. Send for a premium list anyway to O. E. Remey, Secretary State Fair Park, West Allis, Wis.

A Washing Machine Canner

Some years ago an account in Wisconsin Horticulture told of how Mrs. Wm. Gilbert when she

married and went to live on the farm used the wind-fall apples to make jelly which she sold and made enough money to remodel her kitchen and laundry. Mrs. Gilbert's ingenuity has again been at work and she has now made an admirable steam pressure cooker for canning out of her washing machine. Mr. Gilbert has a steam boiler which he uses to inject steam for heating the mash, water and feed, etc., for his stock during the winter. Mrs. Gilbert sends this jet of steam into her washing machine where she has already placed her jars of vegetables to be sterilized, and clamps down the cover and lets them steam under the required pressure for the required time and then at the proper moment shuts off the steam and lets the washer cool down before removing her cans or jars. The washing machine is the ordinary dolly style of washer, and the use of it for canning in no way interferes with its use five minutes after for washing because when washing Mrs. Gilbert always fills it with cold water and then turns the steam jet in until the water is heated to boiling if need be. We are all ready to bow our compliments to Mrs. Gilbert's ingenuity.

Send to the University correspondence Study Department for Extracts from Home Economics Course 5. The course as a whole deals with "Spending the Family Income." The extracts are a fine concise manual of Canning, Preserving, Jelly-making, and Salting, of fruits, vegetables and eggs. There are other notes given out on "Dairying."

Send to the U. S. Dept. of Agriculture for Bulletins 839 on Home Canning by the Cold Pack Method and 841 on Drying Fruits and Vegetables in the Home.

The Apple Grading Law

It has long been conceded by all who have studied the subject that the first essential in successful marketing is a high quality product, the second the fixing of standards.

The passage of the apple grading law by the state legislature therefore marks the very first step in advance in the problem of marketing farm products in Wisconsin.

The bill which was introduced by Senator Everett at the request of this Society had a rather rough passage thru legislative seas. It was once marked for slaughter by the Senate Committee on State Affairs but was saved on the floor by Senator Everett and finally passed both houses.

The law fixes standards for apples packed and sold in *closed* packages such as boxes and barrels and probably baskets. Growers who anticipate packing apples for sale this year will need to read the law carefully.

Madison Wins

Madison, not Pardeeville, is now the home of the McKay Nursery Co.

This firm has passed the "struggling" stage and is now a well established concern with a rapidly growing business. This being the case it is only natural that the managers should seek a central location. Madison offers infinitely better opportunities than a small town for the business end and is also somewhat nearer to Waterloo the growing end.

Madison is a winner and for that matter so are the McKays, about fifty-fifty.

An Echo

When in the future material is sought for the history of this society the secretary hopes that there may be found a sheaf of letters which he has filed with a copy of the special July 4th edition.

These letters coming quickly after the paper was mailed, show clearly that our country comes first in the hearts of our members.

Patriotism, a sense of the duty we owe to the land of our birth, are these things dead or esteemed only as something to be brought out for occasional rehearsal?

These were questions the writer asked over and over and, in a manner to get an answer conceived the Special Number. The answer, complete and soul satisfying will be read by the history writer when he comes. All but one of these letters he may find and that one is too good to keep so long. It's from the far west the land of the I. W. W. the scene of Von Papen's intrigues.

Colville, Wash. July 6, 1917.

Gentlemen: When I subscribed for Wisconsin Horticulture, I thot I would get a really American monthly on Horticulture; but the recent Special, which I am returning with this mail, is an appeal for war at any price, an insult to anyone, who does his own thinking, and does not let Downing and Wall Street do his thinking for him.

My subscription is about run out; and please do not offend me any more with your publication.

Yours for an HONEST America, free from BRITISH as well as German rule.

(Name on Application)

P. S. Your own Bob La Follette is my ideal of how honest Americans should behave in this war.

Washington's Orchard

It is said of Washington, "Providence left him childless that his country might call him Father." That is a distinction only one man can achieve, but it is not the only way in which Washington was distinguished. Besides the title "Father of His Country," Washington has some claim to the title "Father of American Horticulture", as will appear from the following facts:

On Mar. 18, 1774 George Washington leased to one William Bartlett 125 acres of land, "in the barens of Bullskin," a part of the present Berkeley Co., W. Va.

The grantee was "to have and to hold (the land) for and during the lives of the said William Bartlett, Mary, his wife, and Frederick, their son and the life of the longest liver of them." In addition to six pounds annual rent, it was agreed that Bartlett should leave a certain area of timber untouched, erect the buildings, raise 10 acres of "English Grass" and "that within seven years an orchard of one hundred winter apple trees, at forty feet distance every way from each other, and that one hundred peach trees shall be planted on some convenient part of the said demised land, and the same to be kept always, during the continuance of said term, well pruned, fenced in and secured from horses, cattle and other creatures that may hurt, and if any of the said trees shall die, decay or be destroyed, that others of the same kind shall be planted in their place, and the entire number thereof be kept up during the said term."

This orchard of 200 trees is supposed to have been the largest orchard of its time.

It is interesting to note, further, that the site selected by Washington for his orchard has since become one of the largest fruit regions of the state. "Apple Pie Ridge" boasts of one orchard with a record of 600 barrels of apples per acre.

Squash Bugs

A little late for talk about squash bugs but the following by Mr. Fracker of the State Entomologist office may still be helpful.

"No remedies which are completely satisfactory to growers and to entomologists are known for the striped cucumber beetle. The greatest success seems to result from efforts to cover the upper and lower surface of the leaves with spray materials or other finely divided substances. The beetles will not eat leaf tissue which is covered by such substances as lime, Bordeaux mixture or wood ashes if the substance is applied in such a way as to completely cover the leaves and stems on all surfaces. This may be accomplished in the case of powders, such as ashes or lime, by scattering them in the early morning while the dew is still on the plants.

Commercial growers often cover the plants with cheese cloth or screens while they are small and particularly subject to injury. It also still seems best to plant an excessive quantity of seed in order to have a sufficient number of surviving plants after the insects have taken their toll.

These suggestions do not apply to the large sucking insect known as the squash bug which seems to be included in your request. This must be handled in an entirely different way and directions for it will be sent in case you are troubled by this insect. The striped cucumber beetle is usually distinguished from anything else attacking cucumber and squash by the yellow body with three black stripes.

S. B. Fracker,
Assistant Entomologist.

Green Corn in Winter

For more than 40 years we have enjoyed green corn in winter and like the product from the process to be described better than from drying or canning. Gather the ears when at best condition for eating. If too old it will be tough and if the juice is watery instead of milky it will not keep well.

Strip the ears carefully of the husks and silk. To make husking much easier cut off the butts close to the corn with a sharp butcher knife. Cook the corn on the ear in a large boiler until the (milk) has set giving a little less cooking than if for immediate use. As soon as the ears have cooled after taking from the water cut the corn from the cob, cut lightly and scrape from the cob so there shall be only corn to pack away. Have ready earthen ware jars sufficient to hold the quantity desired. In the bottom of the jar place a one inch layer of dairy salt, next a two inch layer of corn, following with half inch layers of salt and two inch layers of corn until jar is full finishing with a one inch layer of salt. A wooden potato masher should be used to press the corn in firmly. The original recipe called for a coating of lard over the last layer of salt.

We now think it more convenient to pack in one or two quart glass fruit jars, with about the same proportion or less of salt and omitting the lard covering. Use the covers of course. Press the corn in firmly so that a little juice

shows on the surface. Corn whether by this process or any other should be taken care of soon after gathering, as it soon becomes tough after gathering.

To freshen for use place the quantity needed over the fire covered with cold water, bring slowly to scalding, drain off the water and repeat. The second water will probably freshen it enough; if not give a third scalding. Then prepare for the table as you would any other green corn.

William Toole.

Contributions for the September number are respectfully solicited but the editor reserves the right to reject any subject matter referring to canning, drying, preserving or anything that has to do with pots, pans or kettles. (I have done my bit and my nerves need rest for a spell.)

"Therefore I counsel that all Isreal be generally gathered unto thee, from Dan even to Beer-sheba, as the sand that is by the sea for multitude; and that thou go to battle in thine own person.

"So shall we come upon him in some place where he shall be found, and we will light upon him as the dew falleth on the ground: and of him and of all the men that are with him there shall not be left so much as one.

"Moreover, if he be gotten into a city, then shall all Isreal bring ropes to that city, and we will draw it into the river, until there be not one small stone found there."

2 Samuel xvii—11–13

Receipts for Fifty-seven Apple Products

Mrs. H. H. Morgan, Madison.

1. Candied apple.

Make syrup of 2 cups sugar to ½ cup water,
Use Jonathon, Bellflower or N. W. Greening apples,
Pare, core and cut in small slices,
Simmer apples in syrup until clear,
Take apples out carefully and dry in sun for 12 hours,
Roll in gran. sugar, repeating rolling daily until apples will not absorb more sugar,
Pack in glass jars.
May be used in fruit cake or as confection.

2. Canned baked apples.

Wash and core sound apples,
Prick skin in several places,
Fill cavities with sugar,
Bake until tender in pan with little water,
Fill with syrup made of equal parts sugar and water boiled 2 min.

3. Apple vinegar.

1 cake Fleischmann's yeast to
5 gal. cider will make vinegar in 3 months.

4. Apple bevereage.

Take 8 washed apples cut each in 4 parts,
Yellow rind of ½ and juice of whole lemon,
1 piece of cinnamon and ½ cupful washed raisins and some of currants;
Boil with 2 qts. water, pour through seive,
Sweeten and serve cold.
Instead of raisins and currants, a crust of brown bread may be cooked with apples, omitting lemon peel.

5. Apple with quince.

To every 4 lbs. apples, allow 1 lb. quince, pared, cored and quartered and can same as in receipt for canned apples.

6. Apples—canned.

1 lb. sugar. Juice and rind 1 lemon,
4 lbs. apple, 1 qt. water,
Use ripe Pippins or Bellflower,
Pare, core and throw into cold water,
Lift carefully from water, weigh, then put into porcelain-lined kettle; cover with boiling water, bring quickly to boil, then simmer until tender;
Boil together 3 minutes the sugar, water and grated rind and juice of 1 lemon;
With perforated skimmer lift the apples from water, hold a moment until drained and slide carefully into boiling syrup; continue until bottom of kettle is covered; boil until apples are sufficiently tender to admit straw, then slide carefully into jar and fill with syrup and seal. May use less sugar or none.

7. Dried apples. Old fashioned.

Pare, core and slice firm apples,
String and hang up in kitchen or dry attic until dry,
May be stored in bags or cans.

8. Evaporated apples.

Pare, core and slice firm apples,
Spread on enameled pans and dry slowly in oven.
These will be much lighter in color than the dried apples.

9. Apple cider.

Use only washed apples,
Cut into pieces, press.

10. Apple honey.

Pare, core and chop 3 qts. apples, saving as much juice as possible,
Boil together for 10 minutes
1 qt. water,
2 qts. gran. sugar,
broken stick cinnamon,
Juice of 2 lemons and the apple juice.
Pour this over the apples and set aside for 3 hours;
Place in enamel-ware kettle,
Cook over moderate heat until clear and thick,
Seal in preserve jars.

11. Apples with whole wheat.

1 cupful whole wheat flour (ground coarse or whole grain),
½ cupful whole wheat,
6 apples, quartered, ½ cupful sugar, 1 teasp. salt,
3 cupfuls water, 1 teasp. soda;
Mix the flour or whole wheat grain with a little water, and add soda. Bring to boiling-point, pour off water, then add water again to cover, bring to boiling-point again and drain, but do not add any more soda. This should done still a third time in order to take away any disagreeable flavor. Mix this scalded meal with the cracked wheat; add the salt and boiling water. Cook slowly over night in fireless cooker. In the morning add the apples and sugar. Transfer to an earthen dish or leave in the fireless cooker utensil. Cover and cook again in fireless cooker for two hours, using one radiator. Large quantities can be made at a time and sealed for future use.

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And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

12. Clarified apples.

10 Greenings, sliced thin, in rings,
Parboil in boiling water;
Drop in syrup made from
2 cups crushed sugar and a little water,
Shake over fire until done.
Should be clear.

13. Apple syrup.

1 doz. tart apples,
1 pint red-raspberries;
Cook in water to cover.
Strain, boil 10 min. add
⅔ quantity of sugar,
Boil 5 min. longer. Seal.

14. Apple butter.

Boil new cider until reduced one half, the day before it is to be used;
To every 4 gal. boiled cider allow
¼ bu. juicy apples, pared, cored and quartered.
Fill large kettle with the cider and add as many apples as can be kept moist;
Stir frequently and when apples are soft beat with wooden spoon.
Cook until dark brown.
Have boiled cider on hand in case it becomes too thick and apples if too thin. 20 minutes before removing from fire add cinnamon and nutmeg to taste.
Keep in stone jars.

15. Apple catsup.

Peel, core and quarter sour apples,
Stew until soft in as little water as possible,
Put through sieve;
To each quart of water, add
1 teasp. pepper,
1 teasp. cloves,
1 teasp. mustard,
2 teasp. cinnamon,
2 medium sized onions chopped fine,
1 teasp. salt,
1 pint vinegar;
Boil 1 hour, seal tightly.

16. Apple jam.

Pare, core and chop
1 lb. apples,
1 lb. sugar,
1 cup chopped raisins,
1 lemon, juice and rind chopped,
1 orange, juice and rind chopped;
Cook until clear and thick.

17. Apple delight.

2 cups chopped apple cooked in double boiler with
2 cups sugar,
1 orange. 1 lemon, juice and rind chopped.
1 cup chopped raisins;
Cook 1 hour and add 1 cup chopped walnuts 5 min. before done. Seal in jelly glasses.

18. Apple preserve.

Use ripe Pippins or Bellflowers,
Pare, core and quarter;
To each pound allow 1 pound sugar and the grated rind and juice of two lemons;
Boil sugar and water until clear, add juice and rind of lemons, then apples; simmer gently until clear and tender but not broken; stand aside to cool.
When cold, put into jars, cover closely and stand in cool place for week, then turn carefully into kettle; bring to boiling-point and simmer 5 minutes; return to jars and seal.

19. Apple relish.

3 lbs. pared and diced apples,
1 lb. raisins,
1 lb. pecan meats.
2 oranges. chop peel and cut pulp into small pieces: cook 1 hour, adding nuts 5 minutes before done.

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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62nd Year

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Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

The Kickapoo Valley WISCONSIN'S FAVORED FRUIT DISTRICT

Our Specialty: Planting and Developing orchards for non-residents. A fewchoice trees for sale. If interested, write us.

THE KICKAPOO DEVELOPMENT COMPANY

GAY MILLS, WISCONSIN

Farm for Sale

With orchard that cannot be beat in Waushara County

180 acres good sand loam adapted for potatoes, corn, clover and rye, beautiful trout stream flowing through pasture land; about 20 acres timber.

Orchard 500 apple trees in their prime.

and Home Buildings worth $3000 excellent location

This property is a money making bargain to someone who likes to handle apples.

Price $45.00 per acre.

Appleton Fruit Farm

Pine River, Wisconsin

20. Apple pickles.

Quarter and core apples but do not peel.
Make syrup of 3 lbs. sugar and 1 pint vinegar,
Stick 2 cloves in each apple;
Cook in syrup until tender. Seal.
Apples may be sliced and use 1 qt. vinegar to 2 cups brown sugar.

21. Apple chutney.

Pare and core 12 sour apples.
3 onions, skinned.
1 bunch celery.
1 cup raisins;
Chop all.
Cook with 1 pint cider vinegar and juice of 2 lemons,
½ glass currant jelly,
2 cups brown sugar,
1 tblsp. salt,
1 tblsp. ground ginger.
After cooking one hour add bag of 2 tblsp. mixed spices.
Cook one hour longer and seal.

22. Crabapple sweet pickles.

8 lbs. fruit,
4 lbs. sugar,
1 qt. vinegar,
1 level tblsp. each stick cinnamon and mace;
Steam apples saving juice to add to syrup;
Boil syrup until thick and pour over fruit.
If it gets thin, in a few days boil again.

23. Preserved crabapples.

Take finest crabapples, rub with clean, dry flannel,
Prick every apple with large needle to prevent bursting.
To every lb. of fruit allow 1½ lbs. refined loaf sugar and 1 pint water;
Make a syrup and skim until clear.
Put in the crabapples adding for each lb. the juice and grated rind of one large lemon;
Simmer slowly until tender enough to prick with broom-straw, but do not allow them to break.

24. Crabapple-orange conserve.

6 cups oranges sliced thin and quartered,
12 cups crabapples, sliced thin and quartered,
2 cups water, 2 cups sugar;
Cook in granite kettle; when thick add sugar,
Cook until glassy.

25. Apples with anise seed.

Take small apples, cut out blossom end, slit peel from blossom to stem end 3 or 4 times;
Wash and put them into jar with 1 cup water or wine and piece of butter, a little anise seed, cinnamon and lemon peel;
Cover and allow to stew, shake a few times and at last put in sugar to taste.

26. Sliced apple compot.

To a medium sized panful of apples take ½ bottle white wine, 4 or 5 tablsp. sugar, some lemon peel and cinnamon and cook slowly in covered dish until done;
If wished, preserved quince or strawberry juice may be added to the sauce.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

McKAY NURSERY COMPANY

MADISON, WISCONSIN

Nursery Stock of Quality

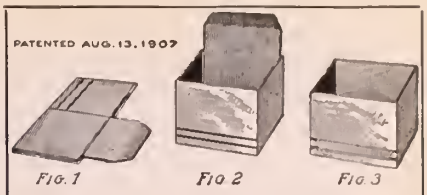
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.



BERRY BOXES

Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

27. Apples with pineapples.

Make a syrup of
1¼ lbs. sugar and 1 qt. water;
Pare, core and quarter 4 lbs. apples;
Cover with boiling water and simmer 5 min.
Add 1 grated pineapple to syrup and bring to boiling-point;
Lift apples carefully and slide into syrup;
Simmer until apples are tender. Seal.
This tastes like pure pineapple.

28. Sweet apple and barberry.

½ peck barberries picked over; wash and put to boil with enough water to cover;
Add 2 qts. molasses, and cook until berries are tender;
While these are cooking, pare, core and quarter 1 peck of sweet apples;
Skim out the berries and add apples to syrup and cook until tender;
Take out apples and put them in the jar with berries and boil down the syrup until thick and pour over fruit;
Next morning heat all together and seal.

29. Spiced apple-sauce.

Pare and core apples;
Cook in a little wine, water, sugar, cinnamon and lemon peel until tender.
Take out the apples and pass through seive;
Reheat and seal.

30. Plain apple-sauce.

Cook summer apples until tender;
Put through strainer or beat with fork. Seal.
When ready to use, reheat, add sugar to taste after removing from fire. Tastes like fresh apple sauce.

31. Baked apple-sauce.

Fill large bean pot with sour apples, pared, cored and quartered;
Sprinkle over them ½ cup of sugar for each qt. apples;
Add 1 cup water, cover closely and bake several hours in moderate oven. When red, take out apples, fill into jars, drain off the syrup, let it boil up once, fill jars and seal. Winter pears also excellent this way.

32. Maple apple-sauce.

Stew 2 qts. pared and quartered apples in enough water to keep from burning, adding 1 cup maple syrup when partly cooked;
When apples become soft, sprinkle with gran. sugar and remove from fire.

33. Sweet cider apple-sauce.

1 gal. fresh sweet cider boiled down to 2 qts.,
Add ½ bu. sweet apples, pared, cored and quartered;
Cook a few apples at a time, skim out and cook more;
Pour syrup over apples and put away to cool.
Next day boil down syrup until thick and pour over apples.
Repeat if necessary. Pieces of apple should be quite distinct but should absorb most of syrup.

34. Sweet apples pickled.

1 qt. sweet apples, pared, cored and cut in rings;
Cook in plenty of water until tender,
Then allow water to cook out and add
½ cup vinegar,
½ cup sugar, scant,
½ in. stick cinnamon,
½ teasp. each cloves, mustard seed, allspice,
½ in. ginger root;
¼ teasp. whole peppers,
Use bag for spices,
Let cook until vinegar is creamy thick.

35. Sweet apple preserves.

1 sliced lemon to 1 doz. apples;
Cook in water.
When tender, pour off water and make into syrup with equal parts sugar. Cook until like honey, add fruit and seal in glasses.

Continued in September Issue

Wisconsin State Fair

and

Tractor Demonstration

Milwaukee, Sept. 10-15 - SIX DAYS FIVE NIGHTS

THIS will be a record year for the department of Horticulture and Plants and Flowers, because the Badger state's Great Exposition in 1917 is built to show what Wisconsin is doing to intensify production, and thus aid Uncle Sam's brave fighters at the front.

Will You be Represented by an Exhibit?
Send for a Premium Book

Superintendent:
N. A. Rasmussen,
Oshkosh, Wis.

Secretary State Fair:
Oliver E. Remey,
West Allis, Wis.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY
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Volume VIII Madison, Wisconsin, September, 1917 Number 1

Members of the State Horticultural Society have responded nobly to the appeals for increased food production and food conservation. We have planted and tended thousands of gardens; we urged others to plant and we have helped them over the rough places. All this we have done cheerfully, willingly and without expectation of reward, but our work is not yet finished. We have yet a greater task to perform, a greater duty that we owe our country.

Our soldiers are on their way to France to suffer and perhaps to die in the cause of freedom. They are brave boys and fear to face no foe, but are helpless against sneaking cowards who may stab them in the back.

While they are fighting in the trenches, we who are loyal, one hundred per cent Americans, must fight the insidious, dastardly element that is spreading the poison of discontent and preaching the gospel of treason often under the guise of patriotism.

We, who are tillers of the soil, may now lay aside the rake and the hoe until another year, but we are soldiers still and may not desert.

Our soldier sons must know that we are fighting for them as they are fighting for us. Strike at this monster of disloyalty wherever it may show its head, whether in your community, in the press, or the halls of Congress. Do not be afraid. Speak, Write, Act!

Dry Surplus Fruits and Vegetables.

Published under the direction of the State Council of Defense by the Agricultural Extension Service of the University of Wisconsin.

At the present time when an increased amount of food is being raised for future use, it is important that it be preserved in the most economical way. Drying requires neither sugar, spice, nor special containers. Under the proper conditions, foods so preserved can be kept indefinitely.

If the supply of canning containers is limited, drying is a good method of saving the surplus.

Methods of Drying

Preserving foods by drying may done in four ways:

By sun drying—Spread the prepared food in wire or netting trays, cover with netting to keep the food from insects and dry in the open air. This method is useful in dry, hot weather.

By artficial heat—in the oven or a special drying apparatus—When drying food in the oven, place it, properly prepared, on clean platters, dripping pans, or trays. Leave the oven door open during the process. Rapid ventilation is essential to success.

By an air blast created by an electric fan.

By combining any of the above methods. Many find it desirable to start the drying process in the oven and complete it in the sun.

Ten Rules for Drying

1. Use good material. Food selected for drying should be in the same condition as that selected for immediate table use.

2. Work rapidly. All foods and vegetables should be dried as quickly as is consistent with good results.

3. Slice large foods to get more drying surface—Small fruits, vegetables, some berries, mature beans and peas, and small onions may be dried whole. Larger fruits and vegetables should be cut so as to expose more surface for drying. The usual way of doing this is to slice them.

4. Do not overheat—If the food is to be dryed in the oven, the temperature should not be too high, otherwise the food will cook rather than dry. Use low heat throughout the entire process. At the beginning the oven should be somewhat cooler than later. The temperature should never exceed 140° F. The use of a thermometer helps to avoid overheating. A cooking thermometer may be kept in the oven while the food is drying by placing it through two corks in which holes have been punched.

5. Be sure food dries evenly—Food should be stirred frequently during the drying process. This prevents overheating and the growth of molds.

6. Keep food free from dirt and insects—Foods dried out of doors must be protected from flies and other insects. Mosquito netting or cheese cloth stretched on frames may be used. Always be careful to avoid dust.

7. Prevent dampness—Do not allow food to become damp during the drying process. It is better to bring food which is being sundried indoors at night.

8. "Conditioning"—All food should be thoroughly dried before it is stored. It is best to allow it to remain in a dry place for several days, turning it frequently in the meantime; this permits more complete and effective drying. The process is technically known as "conditioning."

9. Storing dried food—Store dry food in paper bags, boxes, tin containers, such as pails, and cracker boxes. These should be kept in a dry place free from insects.

10. Save the cooking liquid—Soak all dried food twenty-four hours before cooking. Cook in the water in which it has been soaked; allow this to evaporate to small bulk, and serve with the fruit or vegetable or use in soups or sauces.

How to Dry Vegetables

Corn—Method 1

Immediately after picking and husking place the ears in unsalted, boiling water for five minutes to set the starch and "milk;" plunge into cold water; drain or wipe with clean towels; cut kernels from cob being careful not to cut too close to the cob. Use sharp knife. Dry by any of the suggested methods, preferably in the oven.

Corn—Method 2

Husk freshly picked corn, remove tips of kernels with sharp knife or cabbage slicer; extract pulp or "milk" by scraping with a blunt knife; mix thoroughly; partially dry by placing corn pulp in a pan over hot water until mixture thickens. Spread on clean dripping pans or platters; stir occasionally while drying. When thoroughly dry, condition and pack.

String Beans—Method 1

Directly after picking, string the beans, wash in cold water, drain on soft paper or towels; cut in one-inch pieces or slice lengthwise. Dry by artificial heat.

String Beans—Method 2

Directly after picking, string and wash beans; plunge immediately into boiling water for five minutes; then plunge into cold water; drain on soft paper or towels; cut into desired form — either one-inch pieces or thin slices cut lengthwise, — and dry by artificial heat.

If beans have become too old to use as string beans, allow them to ripen; then shell and store.

Green Peas

Shell freshly picked peas, steam ten minutes or boil five minutes in covered kettle with a small amount of water; plunge into cold water, drain, and dry by artificial heat for six or eight hours.

Greens and Herbs

Spinach, beet greens, lettuce, dandelions, and chard supply mineral material and other necessary food substances which may be lacking in the winter diet. As great a variety of these as possible should be dried.

Herbs are also valuable since they add variety to the flavor of winter foods. Celery tops, parsley, mint, sage, onion tops, pepper and cress are useful for this purpose.

All greens and herbs should be carefully picked over and washed in several waters. These may be steamed ten minutes before drying. The quicker oven method of drying makes them retain their natural color and flavor better. Only in very hot, dry weather should the sun-dry method be used. Dry thoroughly, condition and pack.

Pumpkins and Squash

Prepare by steaming, boiling, or baking; mash and spread on clean dripping pans or platters, and dry in the oven, stirring frequently. Condition and pack as indicated for corn.

Pumpkin and squash may be sliced and dried without previous cooking.

Other Vegetables

Any other vegetables, such as carrots, turnips, and potatoes may be dried. This, however, should be done only when storing facilities are poor or when the product is to be shipped a long distance. Wash, pare or scrape; cut into 1/4 inch slices; dry and pack.

HOW TO DRY FRUITS

Small Fruits and Berries

Small berries, such as blueberries, currants, gooseberries, raspberries, and even cherries and grapes can be very successfully dried. The length of time required is from six to eight hours.

Use only sound, unbruised fruit; wash clean and drain on soft paper or clean towels. Spread on clean dripping pans or platters and dry in oven. Be careful that the oven is not too warm in the beginning. A low temperature (110° F.) at first will be about right. If this is gradually raised to 130° or 140° F., the best results will be produced.

Berries may be successfully dried in trays in open air where the weather is hot and dry.

Apples and Pears

Wash fruit, pare, core, and cut into 1/4 inch slices. Dip immediately into a weak salt solution made of three level tablespoonfuls of salt to one gallon of water. Drain; spread on trays, dripping pans, or platters; dry until somewhat leathery. Condition and pack.

Rhubarb

Select young stems of rhubarb, wash and cut into one-half inch pieces, using a very sharp knife. If the skins are not removed, the rhubarb retains its pink color. Dry, condition and store.

Cherry Crop Being Destroyed by Birds.

The crop of cherries this year is liable to be a little short in this neighborhood, in fact, pretty short. There was a nice stand of the Early Richmonds but the birds beat the owners to it in nearly every case and the housewife who was able to get a few cans of them put up was lucky. In one garden of half a dozen good trees, where at least a bushel of cherries to the tree was ripening nicely, the owners did not get over two quarts in all, the birds taking them as fast as they turned. The later cherries, more sour than the Early Richmond, do not seem to appeal to the birds as much, but at that they are making great inroads upon them all over town. It is a question if this conservation and protection of birds is not slightly overdone sometimes, especially when the early cherries are considered. One enterprising farmer rigged up a number of cowbells in a tree, hitched a rope to it and tied it to a lever that worked back and forth on his windmill, which kept the bells ringing more or less and thus managed to save a part of his crop, even though the music got somewhat monotonous after a while.—*Fox Lake Representative.*

How to Hull Corn.

In Grandmother's and mother's house freshly hulled corn was a most popular breakfast and supper dish, and it is now being prepared in many homes and meeting with a very generous welcome. Freshly hulled corn is far more delicious than any commercially canned, for freshness is as essential to hulled corn as it is to June peas.

It is usually eaten in milk and is a most wholesome, economical and nutritious food, suitable for children and adults. The food value of hulled corn is

Water	74.1%
Fat	.99%
Mineral matter	.5%
Protein	2.3%
Carbohydrates	22.2%
Calories, per pound	490

There is an undeniable tendency to revert to the delicious and wholesome foods of the last century and in this hulled corn is rapidly becoming most popular. The hulled corn vendor is reappearing on the streets and in the markets of southern cities. Many women are finding in its preparation a gainful occupation, for they can easily sell it to their neighbors at a good profit.

How to Prepare Hulled Corn.

Dissolve half a ten cent can of lye in a quart of water and dilute to three gallons with more water in a large iron kettle. Put in four quarts of shelled corn and keep slightly below the boiling temperature, until the hulls have started to break. Then put into a large pan of cold water and rub with the hands thoroughly to loosen the hulls. Take off the hulls and scum from the water and add fresh water several times during the simmering. Stir well with wooden spoon. Change the water five or six times and wash and rub until the corn is white and clean. Keep it in cold water over night, then wash four or five times with hot water.

How to Peel Peaches, Pears and Plums With Lye.

Paring peaches, pears and plums with a knife cuts off and wastes considerable amount of fruit even with the most careful and skilled paring and careful paring takes a lot of time. Experts say the fruit next to the skin has the finest flavor and this part is cut off and thrown away with the skin when a paring knife however sharp is used. The use of the paring knife adds unnecessary labor and is far less cleanly than when lye is used. So peel these fruits with lye.

The process of peeling peaches, pears and plums by dipping in hot lye solution is approved by the U. S. Government Board of Food and Drug Inspection which reports that lye peeling has no bad effects on the quality or flavor of the fruit and is not contrary to the requirements of the Food and Drugs Act known as the Pure Food Law. Lye peeling saves time, fruit and trouble, is wholesome, rapid, cleanly and economical.

All you need is a good iron kettle big enough to hold plenty of water. A wire basket with side handle preferably, to hold the fruit—a ten cent can of lye and a little alum.

To nine gallons of cold water add half a ten cent can of lye and a half ounce of alum—bring to a boil. Have kettle large enough so that it is not over two-thirds filled with the water—this for safety to prevent splashing of the hot solution when the fruit is plunged into the kettle.

When the mixture is boiling, lower the fruit into the boiling so-

Showing how some of Madison's school children "do their bit." Madison is not exceptional, in fact is far behind many cities. West Allis with a population of 9,000 boasts twelve hundred and fifty "Liberty" gardens.

lution in a wire basket container or in a thin but firm cloth such as a cheese cloth. For smaller quantities of fruit, use 4 tablespoons lye to one gallon of water with a pinch of alum added.

Let the fruit remain two minutes in the hot lye solution, then put it through two cold water baths to thoroughly remove the lye, and in the second bath of cold water rub off with the hands, the small pieces of fruit skins that sometimes persist in clinging to the fruit.

Keep the lye solution hot for use but abandon it for a fresh solution as soon as it turns dark for it has then lost its strength.

Cranberry Growers Meet.

The 30th annual summer meeting of the Wisconsin State Cranberry Growers' Association held at the pavilion near Nekoosa, Wis., Tuesday, Aug. 14, 1917, was largely attended both by near and far away members and friends, and full of interest from start to finish.

In the morning automobiles were in readiness to take visiting guests who wished to avail themselves of the opportunity to inspect the Cranmoor marshes.

The business session was called to order in the early afternoon by President Searls. The president's address followed in which among other things he told of the grievous loss sustained in the death of our secretary, Mr. J. W. Fitch, and the passing away of his father, Mr. W. H. Fitch, who, at an earlier date, also ably served this association as secretary. Of the appointment of Mrs. S. N. Whittlesey to act as secretary until the annual election. Of the crop prospects which at the present time are very uncertain owing to the extremely cold, late season. The bloom was unusually bountiful, and under favorable conditions, would have yielded one of the finest crops ever grown in our state.

After the reading of the minutes of last January meeting by the acting secretary, the program was taken up and held the close attention of all present.

Letters were read from Dr. C. L. Shear of Washington, D. C. Mr. A. U. Chaney, general manager of the American Cranberry Exchange of New York, and from several others expressing good will.

Reports on crop prospects were listened to from different sections of the state, all concurring with the opinion expressed by President Searls. C. L. Lewis of Beaver Brook had a most excellent article full of good ideas for future thought.

Mr. Chas. Schlosser, manager of Chicago district, thought marketing prospects good and with shortage of other fruits, prices ought to be satisfactory.

With the resignation of Mr. O. G. Malde as superintendent and manager of the experiment station and the withdrawal of aid by the University College of Agriculture, a new and serious problem confronted the growers which at this meeting received much attention. Prof. F. B. Morrison, assistant director, stated that ours was the only station wholly supported by the college and that it was no longer possible to extend this aid, because of the curtailment of $35,000 of the state budget for university work. Dr. E. D. Ball, state entomologist, gave a very earnest talk on our needs as he sees them and of our being awake to the danger of insect pests, not only to cranberries but to all vegetation and made the startling announcement that 20 per cent of crops in the United States had this year been destroyed by grasshoppers.

The meeting closed with every one impressed that what we can do —what we can have, and what we can agree on, are now matters for deep consideration.

MRS. S. N. WHITTLESEY,
Acting Sec. W. S. C. G. Assn.

Chicago, Aug. 9, 1917.

Dear Cranefield:—

Glad to get the August issue of Hort. this morning. Sorry I can't get away to attend your summer doings.

That man from Colville, Wash., whose letter you printed brays like the four legged property of Balaam. I'm glad he is not going to read the Hort. any more. It's like casting pearls before swine. Maybe I can find some good American to take his place. Best wishes.

Yours sincerely,
GEORGE GIRLING.

"While our soldiers and sailors are doing their manful work to hold back reaction in its most brutal and aggressive form we must oppose at home the organized and individual efforts of those dangerous elements who hide disloyally behind a screen of specious and evasive phrases."—*President Wilson in letter to Samuel Gompers, president of the American Federation of Labor.*

Nice Old Professor—Ah, going out to make the world safe for democracy, are you, boys?

Recruit from Douglas Co.—Naw, I'm going over to educate the sucker who said America couldn't fight.

All who are not for us are against us.

Some Very Good Ideas From Northern Wisconsin.

Of course the bulk of your field is southern Wisconsin, but your greatest future is northern Wisconsin. Articles from men like Vaughn, of Grand Rapids, and Marsh, of Antigo, are practical, to the point, and of great local application. I wish we might have something from each as to each variety of small fruits tried out, the conditions, the results and the conclusions. It would help us all a lot. My own experience dates back to the time when about five years ago someone foolishly gave you a dollar bill and my name. I got the habit, and commenced to read and to observe. I find that I have not only to read of the other fellows' failures, but I have to go and try it out myself before I really know it, and then my neighbors repeat the performance, with the difference that I have preceded them a year or two, and they are saved some of their mistakes, and have the way more definitely pointed out.

Two years ago I asked the manurial value of old, well rotted saw dust. Prof. Woll answered, showing that it was worth about the price of straw, and then slipped up by adding the cost of hauling to the value as shown by analysis. I have hauled a lot of it this winter, to use as mulching around small fruits, and shall plow under a little, and in another year or two I should have a definite and final answer. I am hauling out a lot of unleached manure for the apple trees and have a great thick mat around some of the trees. The drifts are so deep that we cannot reach all the trees, so we will have some check plots, whether we want it or not.

I find that in this section where the average farmer tries to cultivate his small trees he is almost sure to bark his trees, or to injure them in some way. My own trees are on a steep side hill, and after an unfortunate experience with gullying I decided to keep the trees in sod strips. That stopped the washing of the hill side, and stopped the barking of the trees, if I was close enough to talk to the teamster, and to threaten fines, but it also almost stopped the growth of the trees. This year I am mulching the sod strips, but think that the problem is one step nearer solution. If the old saw dust pile works out as Prof. Woll indicated, then the rest is easy.

I have noticed a tendency to recommend the Snyder blackberry in preference to the Ancient Briton. My experience leads me to think that the Ancient Briton is much the better. With me, on a bit of stiff soil, it is hardier, stands abuse better, is a better yielder, although not so early, and is much easier to lay down. My newer plantings will be of the Ancient Briton. I have none of the Eldorado, but a neighbor has quite a planting of them. He has neglected them badly, and they have winterkiled each year and he has no fruit that I know of. Ancient Briton is hardy enough so that some years it lives through without protection. I believe that on a steep north hillside it would get along without laying down.

A striking picture. The first thing that strikes you is the woodhouse, next is the schoolhouse and third is the outhouse. Why not reverse the order, or, perhaps, better still put the woodhouse *back* of the schoolhouse.

Of the red raspberries, I have two varieties, the King and Brandywine. I do not know which is which, but one variety is much hardier than the other, and I am taking new selections accordingly. I think that the King is the more hardy of the two. The weaker variety has a wider, more rank growth, and the new canes are brighter, more yellow color. In this section the

wild raspberries are so plentiful that bee men make quite a little from the raspberry honey, yet we find that it pays to have some right in the garden. The time taken to cultivate is less than the time it would take to go to and from the wild patch, and there is better and much more convenient picking at home. In fact, it sometimes means the difference between berries and no berries. We find that a small fruit patch means a big difference to the table the year around.

George G. Curtis.

A Trifle Discouraged.

Your letter reminding me that my subscription to Wisconsin Horticulture has expired, received, and you may as well drop my name for the present. I have come to the conclusion that it is only wasting time trying to raise fruit here. I had Hibernal, Duchess, and Dudley winter killed last year. I think the heaving of the ground has a bad effect. I have seen pine stumps 4 feet across heaved up and split in two by frost. There is no subsoil drainage here. I am in the wrong place.

A. M.

This is from central Wisconsin and certainly sounds rather discouraging, but the writer is of the opinion that the trouble lies in poor location of this particular orchard. The last short sentence, "there is no subsoil drainage here," seems to tell the whole story. Probably also a lack of air drainage. Fruit trees need both soil and air drainage and both of these are usually lacking on the new farms of northern Wisconsin.

Garden Notes at Sitka, Alaska, Station.

By J. P. Anderson, Horticulturist.

Apples.

Several varieties of apples matured fruit the past season. The best of these were the Yellow Transparent and Liveland Raspberry. Trees of these varieties bore quite good crops, as did also the Whitney crab. Apples grown here the past season reached about normal size, but were more pointed and angular than the same sorts grown in a warmer climate. A variety which has been labeled Sylvan Sweet bore good apples, but they were not sweet. Other varieties that matured a few apples are Duchess, Hyslop, Keswick (Keswick's Codlin), Peerless, Tetofski, and two unidentified sorts, one of which was a crab and the other similar to the Wealthy, perhaps being that variety. The Patten (Patten's Greening) set a good crop of fruit but did not mature before freezing weather. The quality of the fruit was good, but some sorts, especially the Yellow Transparent, showed some tendency to crack.

From the seed obtained in 1914, by crossing the native crab with cultivated varieties, only a few plants were secured. The work of crossing was continued this past season.

Currants.

Currants did not do their best this year, owing to the blossoms being attacked by a fungus. The crop was fairly good, however, especially of the red sorts. Some varieties set out in the spring of 1914 produced a fair amount of fruit, but others bore little. The Perfection seems to be by all odds the best red currant so far tried. Many of the berries were more than half an inch in diameter, with an extreme of nine-sixteenths inch. This variety is also productive. White Grape (Imperial White) seems to be superior to the other white varieties grown, while Lee (Lee's Prolific) has not yet been surpassed by other black sorts. Red currants added to the collection the past season were Holland (Long Bunch Holland) and Moore Ruby. Three varieties of black currants were also added—Naples (Black Naples), Black Victoria, and Wales (Prince of Wales).

Gooseberries.

The Champion again proved to be the best all-round variety. The Whitesmith seems to be the best of the English sorts. Some of the English varieties are badly affected with mildew, while others suffer but little. The varieties set out in 1914 have not yet demonstrated their value, but Pearl seems very promising.

Raspberries.

As usual the Cuthbert bore a heavy crop of excellent fruit of large size. A number of other varieties at the station have not had a fair chance to demonstrate their comparative value the past two years. One variety of the European species (*Rubus idocus*), called the Orange, bears fruit of the very highest quality, but seems unable to properly maintain itself. Golden (Golden Queen) and St. Regis were added to the collection during the past season.

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The Summer Meeting.

Once upon a time we held a summer meeting in La Crosse. In addition to the officers, the executive committee, and the speakers we had a total attendance of one. One lone farmer from somewhere behind the hills back of La Crosse wandered in but stayed only for one session.

Still back of that the writer recalls a summer meeting at Omro, about fifteen years ago, attended by the president, the secretary, the treasurer and four others.

During the past five or six years, however, there has been a big change and the attendance as well as the interest at the summer meetings has crowded closely that of the annual winter meeting. We all recall with pleasure the two meetings at Sturgeon Bay the former Oshkosh meeting, the Bayfield and the Lake Geneva meetings. It is a matter beyond dispute that one hundred or more members who attended the meeting at Oshkosh August 22nd and 23rd found it a profitable and entertaining experience. The marked feature was the tense interest in the program. The room was filled at least an hour before the time set to begin and none left until the last word was spoken.

The heat in the hall was intense at times but the only effect was a call for more open windows, no one thought of leaving.

Members were present from Sturgeon Bay, Green Bay, Neenah, Waupaca, Grand Rapids, Milwaukee, Madison, West Allis, Kenosha and many other points.

The second day was devoted to excursions, the forenoon visiting market gardens, the afternoon to a trip across country on the excursion steamer Leander Choate. This double-deck boat carries 500 people, has two funnels, an enormous stern paddle wheel, a flat bottom and is said to require only a heavy dew to float it.

After crossing Lake Butte des Morts, seven miles, we entered the Big Marshes several thousand acres in extent, through which the Fox winds, twists and turns for miles and miles. How we ever got to Omro the pilot only knows. For a time we would seem to be well on our way when suddenly we would cut across country and head back to Oshkosh or Waupaca or the Philippines but eventually we landed in the upper river and at Eureka. This trip no doubt seems commonplace to Oshkosh people but in the way of an excursion by *water* its got anything else beat in a dozen different ways. Those great marshes have a wild beauty all their own. Tall, waving grasses conceal a treacherous bog across which no man may go either afoot or otherwise except by one narrow channel. Here the wild fowl may bid defiance to the hunter and the heron, the rail and other denizens of marshes find a paradise. After crossing the marshes this great bulk of a steamer edges and shoulders its way through a narrow channel for miles, meadows, cornfields and gardens on either bank. It was certainly a novel and exciting experience to most of us and everybody got back tired and happy—but not hungry for the Oshkosh ladies brought more sandwiches, cake and other delicious eatables than could be eaten.

Storing Vegetables.

Mr. Irving Smith of Ashland, having had long practical experience in storing vegetables, was invited to tell about it at the summer meeting. He did it but instead of writing it out, just talked off-hand and directly to the point. Here are a few of the "high lights," the balance we will get when the reporter's transcript comes.

The vegetables commonly stored are potatoes, cabbage and the different root crops such as carrots, parsnips, salsify, etc. The ideal storage place is the out-door or detached root-cellar or root house, commonly built in part below ground, frost proof, moist, and ventilated. Here vegetables will keep

throughout the winter without attention.

These vegetables may be subjected to a low temperature, short of actual freezing, for a long time without injury. An ordinary house cellar with earth floor affords conditions closely approaching those of the root-house. The gardener who has a house with furnace or other heating apparatus in the cellar is up against a difficult problem which can be met in part by partitioning a corner to provide a low temperature. Usually, however, the dryness of the air is still a problem which is met by packing the vegetables, except potatoes, in paper lined boxes and these covered with several layers of paper. Sand is not good packing material, it quickly loses its moisture and then sucks the moisture from the roots entrusted to its care. Cabbage is more difficult to keep, their roots dequiring a cool, dry place. Lay on board shelves, not touching, or suspend by the stalk from the ceiling.

The State Fair.

The fair is one of the big educational institutions of the state. The fair is now managed by the Department of Agriculture which was created two years ago and includes, in addition to the state fair, the bureaus of entomology (nursery inspection), immigration, seed and fertilizer inspection and veterinary board. C. P. Norgord is at the head of the Department and is styled Commissioner of Agriculture. The fair is in charge of O. E. Remey, secretary, A. W. Kalbus, assistant, and an advisory board of ten.

These men work hard throughout the whole year to provide a good fair for you and me and the rest of us and it's little enough on our part to give them our support. The support they need most of all is your attendance and your half-dollar at the gate. It's your fair, provided for your benefit and it's always worth the price.

This Applies to Wisconsin Also.

In this connection it is well to quote a few words uttered to the Union League club of New York by Elihu Root, who recently returned from Russia, where he was sent by this government as the head of a special commission to offer the hand of fellowship to the new Russian republic. Of Russian prospects Mr. Root spoke hopefully, but of certain things in this country he spoke in a less heartening tone. Here is a brief quotation from his words:

"There are men walking about the streets of this city tonight who ought to be taken out at sunrise tomorrow and shot for treason. They are doing their work under false pretense, they are pretending to be for their country and they are lying in every way and in every word. They are covering themselves with the cloak of pretended Americanism, and, if we are to be competent and fit for our liberty, we will find them out and get at them."

"There are some newspapers published in this city every day the editors of which deserve conviction and execution for treason. And sooner or later they will get it."

Mr. Root is not merely one of the ablest, most eminent and most patriotic of American citizens, he is one of our greatest lawyers and is accustomed to use words without heat and with accuracy and deliberation. This utterance expressed, and was intended to express, Mr. Root's deep sense of the mischief being done to the cause of liberty in Russia, by reports, busily retailed there by German agents, of the pro-German activities in our congress and among our people everywhere, and nowhere more actively than in Wisconsin; activities against the draft, in I. W. W. strikes and in pro-German newspapers and speeches. In the light of such denunciation from such a man, it is time for every American who loves his country to be serious, to be alarmed, but not afraid, and to be at work.—*Ellis B. Usher in Madison Democrat.*

Receipts for Fifty-Seven Apple Products

Mrs. H. H. Morgan, Madison.

(Continued from August)

36. Sweet apples.

Peel, quarter and core,
Put on fire with water, anise seed, a little butter and ½ cup vinegar or lemon juice and cook until tender.

37. Apple marmalade.

Pare and core and put in pan of water acidulated with juice of 1 lemon to keep fruit white;
For every pound of fruit, take ½ lb. sugar;
Let it boil, skim carefully, add the thinly peeled rind of 1 lemon cut into small pieces; put in apples, stirring constantly;
Use but little water and select variety of apple that will not become pulpy.
May also use the juice of lemon and mash apples.
If, after 1 week, it becomes soft, cook again.

38. Apple-marmalade spiced.

Same as plain, using bag of spices while cooking,
1 teasp. cinnamon,
1 teasp. cloves,
½ teasp. nutmeg,
½ teasp. allspice.

39. Apples and rhubarb.

1 part canned rhubarb to 2 parts sour apples;
Cook and seal.

40. Apple jelly.

Lady Blush for red jelly,
Fall Pippins for white.
Cut in pieces without paring or coring,
Put into poreclain-lined kettle, barely covering with cold water,
Cover kettle, boil slowly until apples very tender;
Drain through flannel bag; do not squeeze or jelly will be cloudy.
To every pint of this juice, allow 1 lb. granulated sugar.
Put juice in kettle, bring quickly to boil;
Add the sugar, stir until dissolved, boil rapidly until it jellies, skimming as scum rises; 20 min. usually sufficient;
Commence testing after 15 min. boiling.

41. Crabapple jelly.

Cut large Siberian crabs into quarters and to every 5 lbs. of crabs, allow 1 pint of water;
Proceed as for apple jelly.

42. Apple-mint jelly.

4 lbs. Greenings,
1 cup mint chopped fine,
Sufficient water to keep from burning;
¾ cup sugar to 1 lb. juice.
Cook until ready to jelly, then add
4 teasp. lemon juice and green coloring.
Creme de menthe cordial may be used instead of fresh mint.

43. Apple-cranberry jelly.

2 cups cranberries cooked tender in ¾ cup water,
3 cups sliced apples cooked soft in ¾ cup water;
Strain together; make jelly as usual. 2 glasses.

44. Spiced apple jelly.

Slice sour apples.
Boil until soft in little vinegar with spice bag left over from pickles, or a small stick cinnamon and cloves;
Strain and use equal parts sugar and juice.

45. Apple lemon jelly.

1 qt. apple juice,
Juice 1 lemon,
1 qt. sugar,
Northern-spy gives best color;
Apple-orange jelly made same way.

46. Apple-orange jelly.

Made in same way as apple-lemon jelly.
Use 2 oranges. May use vegetable orange flavoring.

47. Crabapple-peach jelly.

3 parts crabaaple juice to 1 part peach juice;
Process same as other jelly.

48. Apple-grape jelly.

Use equal parts apple and grape juice and proceed as for other jelly.
Wild grape and apple, excellent meat relish.

49. Apple-quince jelly.

Use equal parts apple and quince juice and proceed as for other jelly.

50. Apple-barberry jelly.

Wash and pick over barberries and to every 4 qts. berries add 3 pints water and 1 doz. sour apples quartered and cored; boil slowly until fruit is soft, turn out into jelly bag and drip but do not squeeze. Boil 20 min., skim, measure; to every cup juice add 1 generous cup sugar. May require 30 min. boiling. Seal after 3 or 4 days.

Other apple-combination jellies.

52. Apple-strawberry.
52. Apple-blackberry.
53. Apple-pineapple.
54. Apple-pear.
55. Apple-rhubarb.
56. Apple-red raspberry.
57. Apple-geranium leaf.

Place leaf in bottom of glass; fill with jelly.
Leaf will come to top and may be removed before jelly sets, if mild flavor is desired.

Bayfield's Big Berries.

Bayfield, Wis., Aug. 4.—This has been one of the best seasons for Bayfield strawberry growers since fruit raising on the peninsula was undertaken on a commercial scale.

About twenty carloads of berries have been shipped, thirteen full cars and the others in less than car lots by express, have been sent out, and all of them were sold when loaded, none going on consignment.

The price range has been such that growers will net slightly better than $2 a crate on the average, barring any unexpectedly large loss claims and Manager Boutin of the growers' association considers it the best through-season record yet made.

Cherries are beginning to come into the market at a fair rate, the first carload having been sold already.

Horticultural Projects

C. B. BLOSSER

This essay won the First Prize, twenty-five dollars, in the Students Speaking Contest, Annual Convention, Madison, Dec. 12th, 1916.

Agricultural Education has in the past concerned itself chiefly with agriculture as a science, recently however the interest of education has shifted to agriculture as an art: that is, the application of its principles to actual farm operations. The chief business of the teacher has been to inquire with his students into the fundamental principles underlying its problems without attempting any serious way to apply these laws in actual practice. What have been the methods employed by the teacher of agriculture in our grade and high schools? Sometimes laboratory facilities were available, occasionally meagre libraries, but far more frequently it has been the time worn method of the teacher and the book. The results we know only too well. And it is not surprising that there has developed among the farmers of our country, a stolid prejudice against this so-called book-farming. It did not require any great insight on the part of the agriculturist to realize that what was being taught under the guise of agriculture brought no solutions to his problems. Neither does it require the brilliance of a wizard to see that there is a vast difference between the understanding of a scientific principle and its application to the farmers every-day difficulties. To appreciate the fundamental principles of pruning a tree is for the scholar a comparatively simple matter, but to take a pruning shears or a saw and per-

form the actual operation is a different proposition. Not long since I knew of a young man in one of our state agricultural colleges who was so proficient in the science of poultry husbandry that he could answer quickly and accurately any questions relative to this subject; yet this same young man when assigned the task of operating an ordinary incubator, failed utterly. When given the care of a flock of baby chicks, made such ridiculous blunders that he became a laughing stock. This young man's difficulty was not that his scientific training was of no value; quite the contrary. He simply had not learned to apply his theories to the actual operations required in running a hatcher or caring for a brood of chicks.

That agricultural training, succeeds best therefore, which educates not away from theoretical thinking but towards its correlation with scientific practice. It is remarkable that the mass of educators have been so slow to recognize the weakness of our system. But it has been the recognition of this weakness that has brought about within recent years a radical change of attitude relative to the method of teaching this most important subject.

Serious attempts are at present being made in our secondary schools and colleges of agriculture to adjust courses of study to meet the new demands. As a result practical projects have been introduced into our schools to supplement and illuminate the principles taught in the classroom. So that for example, if a boy is taught the fundamentals of strawberry culture, he will also be required to prepare the soil, plant and care for an actual bed of strawberries. If the school in question is so fortunate as to have access to a plot of land, the projects are carried on at the school grounds, if not then the home grounds of the boys and girls are used and the experiment is called a home project. In any case the work is done under the direction of the teacher, or some other competent person.

Up to the present time there have been introduced into our educational system two more or less distinct types of projects. First and primarily for the benefit of city children in the grades, the practice of school gardening. Second the above mentioned school or home project for the benefit of both city and country young people. It is here I contend that horticulture offers some of its largest educational opportunities. That it has already blazed the way as a pioneer is shown by the fact that school gardening *which is distinctively a horticultural field* has for some years been employed as an important educational agency in our cities.

To show what the possibilities of such a movement are we need only refer to those who have been most closely associated with the work. The founder of the children's school farm in New York wrote in her first report that she did not start a garden simply to grow a few vegetables, although many a poor family doubtless profited in a material way, but to teach some of the most necessary civic virtues. Thus the children become interested in the care of public property, they acquire habits of economy, honesty, self-reliance, civic pride, and a wholesome respect for physical labor. It seems evident, therefore, that the benefits are not educational only but industrial and social as well. The seriousness with which the movement is regarded is shown by the fact that gardening associations, local school boards, state boards of education, agricultural colleges, and horticultural societies have encouraged and superintended the work.

One reason why the Oshkosh meeting was a success. A regular monthly meeting of the Oshkosh local society.

In the second type of project, horticulture is destined to play an equally important part in the attempt to effect a working combination between theoretical school room information and its application to live problems.

In the first place, I am convinced on account of the broad scope of horticultural activities

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that there is no other field of agriculture that offers such a wealth of materials, or such a large number of workable projects that will at the same time solicit the interest of our boys and girls. I maintain that they can be easily induced to plant and care for a strawberry bed, or prune and spray an apple tree, or construct and care for a hotbed, or plan a garden, because, first: these are problems against which they feel capable of measuring their skill successfully; second, because it is not difficult to visualize lucious strawberries or ripe juicy apples, or crisp vegetables. From the very nature of circumstances they are attracted by the prospects of trying out such a problem.

Would not this principle apply equally well to the beautifying of the home ground as a landscape project, or the planning and care of a flower garden, or the production of clean, smooth potatoes by the application of the formalin treatment for scab? All of which projects appeal to the special senses with which youth is accustomed to investigate and pass judgment upon the quality of objects. I have enumerated only the most important possible projects but these together with numerous similar ones furnish the type of experiment in which is found a concrete basis for the judgment of results and this is essential.

A second advantage which may be fairly attributed to horticultural projects is the low cost of equipment: in fact the necessary materials are usually found in abundance on the average farm. A first class hotbed may be constructed with an outlay of but a few dollars: a pruning outfit and spray apparatus can be secured at a nominal cost. Indeed, the equipment required by the whole list of horticultural projects need not exceed fifty dollars. So too, the waste land of the farm may well be turned to good account by the boy or girl. Landscaping and beautifying the home grounds can be accomplished largely with native materials. Planning the home garden requires no outlay of cash. Certainly the average parent would not hesitate to turn over to the boy a few apple trees. In many cases the whole orchard might well be turned over to the junior member of the firm and his teacher. In short the expense of any single horticultural home project need never be a serious objection.

In the third place I contend that, although horticultural products

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may seem to occupy only a place of secondary importance on the average farm as compared to other farm crops, still they supply a universal need and therefore make the strongest appeal to both parents and students who are interested in farm problems. What lures the good housewife on the first warm days of spring to the roadside or orchard in search of the first shoots of dandelion or wny is the entire household, once the soil becomes tillable in spring, to be found in the early potato plot, the orchard or garden? Do you say to reduce the high cost of living? This may be a motive. But why are city folks during this season of the year willing to pay fabulous prices for fresh vegetables? It is more than a mere financial consideration. It is their inherent, insatiable craving for something green and fresh from the hand of nature. There was a time when the proverbial bread and meat satisfied the comparatively simple food demands of our forefathers, but not so today, for fruit and vegetables in the average American home are quite as essential a part of our diet as bread or meat and are absolutely necessary to the individual's best health. It is on the basis of this interest in orchard and garden products that horticultural projects can legitimately lay claim to the support of the American home and attract its young people to the educational possibilities of farm life.

Finally, I believe that horticulture is especially well adapted to the introduction of project work into the primary and secondary schools, because it furnishes a

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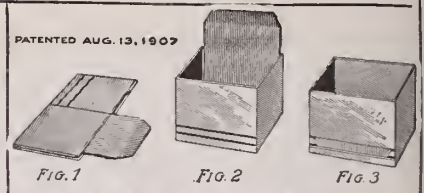

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simple and direct method of bringing together in the spirit of cooperation the school and the home. The teacher's frequent excursions to the farms of the community furnish him the much needed opportunity to study the home conditions of his students. He becomes better acquainted with the parent and they learn to know him, so that they can no longer be considered as separate educational agencies but as a combined force. The teacher and the parent thus become cooperative factors in the theoretical as well as the practical education of the child. Their united efforts, I am confident, are destined to furnish the dynamic which shall instill into the boys and girls of America a greater interest in educational work, an infinitely greater respect for the farm and its activities, and, if need be, to develop out of their potential possibilities of today the successful farmers and their wives of tomorrow.

You Are Not Especially Invited

To visit the W. S. H. S. Booth at the State Fair, because members of this Society need no invitation. It is your exhibit, walk in and make yourself at home. Bring your friends, the ones who will ask questions. We will be supplied with literature on spraying, fruit lists, etc.—free to interested persons, and

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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII Madison, Wisconsin, October, 1917. Number 2

A hardy, free-flowering shrub well adapted to planting in borders and for screening unsightly fences, outbuildings, etc. Known to botanists as Sambucus Canadensis; to everybody else as common Elder.

Storage of Vegetables.

By J. R. Hepler, College of Agriculture, University of Wisconsin

Vegetables for winter use are ordinarily canned or stored. With most vegetables, storage is preferable to canning, as it is cheaper, requires less work, and the product is better, due to the fact that the characteristic flavor of the vegetable is preserved to a greater degree by this method. The factors governing the storage vary materially with the different vegetables. There is one requirement, however, that is common to all—the vegetable to be stored must be sound, that is, free from bruises or decay. Vegetables which have decayed at the time of placing in storage, not only are valueless, but usually spread disease to other vegetables. Vegetables which are bruised offer more favorable conditions for the entrance of rot than those which are sound. With the proper vegetable storage, the chief things to consider in storing are the variety used, temperature, moisture content of the air, and the maturity of the vegetable. The last three vary considerably with the different kinds of vegetables.

As regards the variety to be used, it is always desirable to select those varieties which are known to be good keepers. For example, it would be folly to grow an early variety of cabbage such as Jersey Wakefield, for winter storage.

The varieties best adapted to late storage are of the Danish Ballhead type, including Ballhead, Danish Roundhead, Hollander, and Amager. These varieties, in addition to being desirable for storage, are fairly resistant to the rot disease common in the field. They also have the advantage that they do not ordinarily burst their heads and are always very solid. Their disadvantages are that they require a very rich soil and are not of high quality. Succession, Sure Head, Flat Dutch, Brunswick, and All Head are varieties which keep very well until January and are especially well adapted to the making of sauerkraut. Volga is a high quality cabbage that keeps well until the holidays.

Methods in Storing Cababge

Cabbage for storage should not be over-mature, particularly if it is of the mid-season variety, as this causes bursting of the heads. It must be free from disease and must be handled with care so as not to bruise it. It keeps best when stored in a low temperature, within a degree or two of freezing, and should have a fairly moist atmosphere.

For cellar storage, the usual method is to wrap the cabbage in newspaper or other heavy paper and keep it in the coolest part of the cellar, providing that the temperature does not go below the freezing point. Cabbage may also be stored in a box and covered with sand. The sand will absorb any disagreeable odors which may arise from decay. When stored in sand, it is particularly desirable to keep the temperature near the freezing point, to prevent premature growth.

Pit and Trench Storage

Cabbage which is wanted for spring use may be stored out of doors, either in trenches or pits. In this method of storage only the outer leaves are removed from the head and the stems are left intact. The trench about six inches deep and sufficiently wide to accommodate three heads of cabbage placed sidewise, is dug on a well drained location. Three to four inches of straw or leaves are placed over the bottom of the trench, and the heads are placed in rows of three on this material. The stems of the outer heads are sloped towards the center. When the desired number of cabbages are in the trench, they are covered with about six inches of soil. After the upper inch or two of the soil has frozen, an additional layer of marsh hay or manure is put on to prevent alternate freezing and thawing. Pit storage does not differ from trench storage, except that the pit is usually round and somewhat deeper than the trench.

Ways of Storing Root Crops.

Winter radishes, carrots, beets, turnips, rutabagas, parsnips, and salsify demand about the same storage conditions. The late varieties of these crops are best for storage. They should have a low temperature, close to the freezing point, and relatively large amounts of moisture. If this moisture is not provided, they will wilt and lose their flavor and become coarse in texture. After wilting, it is impossible to get them back to their original condition. They may be stored in sand which is moistened from time to time in order to prevent wilting. These vegetables may also be stored in pits, but with the exception of salsify and parsnips, must be covered sufficiently deep to prevent freezing, as they are spoiled if frozen. Parsnips and salsify may be left in the rows in the garden over winter and will be even better for use in the spring than in the fall. It may be desirable to put a light mulch of leaves or straw over the rows just after the ground has frozen.

Storage Onions Must Be Mature.

Onions for storage should be allowed to mature fully, which will be indicated when the stems naturally begin to break over. They may then be pulled and allowed to lie in the open for three or four days to mature, or they may be carried inside in a well ventilated room where they are protected from the sun. They should not be taken into a moist atmosphere. After they have cured the tops should be cut off and the bulbs stored in a dry and, preferably, dark place. Low temperatures are preferable to high temperatures, but well matured bulbs will keep at a temperature around fifty degrees. Changes in temperature or a moist atmosphere should be avoided as this is likely to cause premature growth of the onion.

Store Green Varieties of Celery.

The best varieties of celery for storage are the green ones, such as Giant Pascal or Winter Queen. Blanching ordinarily takes place after the plants are put in storage. Self-blanching varieties started somewhat late may also be stored, but will not give as satisfactory results. For late fall use, the celery may be trenched, covering with earth to within two or three inches of the top, and, on cold nights, covering the tops with blankets, rugs, or other protective material. Do not cover the entire tops with soil, as this will cause decay. Celery may be kept in this way until about December 1. It may also be kept in boxes buried in the ground or in hotbed pits.

The tops should be kept dry and the box well ventilated. In cellar storage, the common method is to set the roots of the plants in a quantity of sand or soil, sand being preferred. The plants are set in as closely as possible, and in this condition, if the temperature is sufficiently high, will make some growth during the winter. The celery and the stalks will be well blanched, giving the highest quality of celery to be had. The temperature should be kept as near 40 as possible.

Medium Dry Storage for Squash.

The Hubbard and Delicious varieties of winter squash are both excellent keepers. Mammoth, Large Cheese, and Big Tom are the best storage pumpkins. Ford Hook, Long Marrow, Delicata and Crook Neck are very good keepers, of the summer squash type. They should be kept in a fairly dry atmosphere and at a temperature ranging from 45 to 50. Only matured specimens should be stored. These should be harvested before exposed to frost sufficient to injure them.

The Apple Grading Law.

Geo. F. Potter

In enacting an apple grading law Wisconsin is not trying an experiment, but is simply adopting a plan which has been demonstrated to be beneficial to the fruit industry in other sections. Our law is almost a copy of the New York statute, which is now being enforced for the fourth season. Several other eastern states have similar enactments, and in the western states where fancy box apples are packed, much more drastic laws are in effect.

The Canadian Fruit Marks Act preceded by several years the legislation in the United States, and it is probable that the operation of this law forced similar legislation in this country. The standard of pack of the Canadian growers was so materially raised that they obtained higher prices for their product. On the English market the trade showed a decided preference for Canadian fruit because of its uniformity, which was entirely lacking in the American product. Growers, dealers, and officials were pleased with the results, and it is not strange that American producers felt that they needed similar laws.

In 1912 Congress passed the Sulzer bill providing for standard grades of barreled apples in the United States. However, owing to the vastly different conditions under which apples are grown and packed in different sections, the government officials did not feel that any one law could be formulated which would fit all conditions. Accordingly, the Sulzer bill was not mandatory but left the grower free to decide whether or not he would pack under its provisions. In consequence the law has not been used, at least to any appreciable extent, and since a good quantity of any product must be put on the market before it can establish a reputation this law has been of little value. It simply demonstrates that a law of this sort must be compulsory if it is to be of value.

In contrast to this results from the New York law were immediate. During the winter following its enactment, I received the suggestion from a Duluth commission firm that if Wisconsin growers wished to get full value from their fruit it would best be packed according to a known standard such as the New York law.

During the fall of 1916 I had the opportunity to spend two weeks in the apple belt of Western New York, working in the apple har-

vest assisting in packing under the law, visiting growers, and talking to the representatives of large dealers who filled the hotels in this section at that time. Almost without exception I found that all concerned approved of the law, and would not for any consideration go back to the old system.

Under the old system there were almost as many opinions as to just what constitutes a first grade or a second grade apple as there were different growers. The numerous marks which have been used, as *A*, *B*, *1*, *2*, *A1*, *X*, etc., bear witness to this confusion. Under our law four grades based on color, shape, and blemishes, namely *Fancy*, *A*, *B*, and *Unclassified* are definitely defined. In each of these different sizes may be packed as desired. Now not only must the growers agree on their ideas of grades, but each must put his knowledge into practice if he is to sell his fruit in closed packages. If I now desire to sell a lot of apples I may wire or telephone a commission man, naming the varieties, grades, and sizes I have. The buyer knows these grades, and can accept my word for he knows that if the apples are not up to the standard he may bring suit against me for offering them for sale. He may then make his offer without risk. A basis of exchange and a business confidence are provided which were impossible under the old system.

That apples do thus sell according to the mark on the end of the barrel when the law is properly enforced is attested by the experience of a New York packer. This man had a lot of apples concerning the grade of which he was undecided. Owing to this there was a misunderstanding among those who were marking the barrels and part were marked one grade and part a lower grade. Although the apples were identical, the prices received corresponded to the way the barrels were marked.

I believe, therefore, that the law should prove of especial value to the small growers, of whom we have many in Wisconsin. The man who ships large quantities of fruit may establish a reputation and market to advantage even without the law because his product is known to many dealers. To this man the law offers that protection which comes from preventing the markets from being spoiled with inferior fruit. The great advantage to the small grower comes through having his pack known, although he personally may ship only a car or two.

The representative of a Chicago commission house stated to me this season that he considers the Wisconsin Wealthy to be better if free from disease and other pests than any which he is able to obtain from regions farther south. But it is not grown in sufficient quantities in any one center to make it pay to send out a buyer. It is my belief and hope that through our law many of these small lots of Wealthies packed in a standard honest pack may find an advantageous market without the intervention of the buyer.

The growers of the state will probably feel that it is a difficult matter to meet the requirements of the law. While more attention must be given to sizing and grading than in the past, I wish to assure any who are anxious that there is no need for apprehension. The Department of Agriculture will soon issue a bulletin explaining and defining more fully the terms of the law. Every packer should apply for a copy of this pamphlet.

Where operations are on a small scale the grading and sizing may be done at once from a packing table, placing each grade and size which it is desired to pack in a separate half bushel basket such as is ordinarily used in barrel packing. Where the operations are on a large scale, sizing machines are advantageous. The grading must be done by hand by inspection, but may be done either before or after sizing. If done before one grade at a time is run through the machine, if afterward the various sizes delivered from the machine are later separated into the respective grades. Proper racking of the barrel during the filling process is probably the most important factor in complying with the requirement of proper packing. After the addition of the first bushel of fruit over the faced layer, the barrel must be shaken with a sharp, short motion, and with the addition of each half bushel thereafter until it is full. In tailing off the surface with most varieties should be about an inch or inch and one-half higher than the chine of the barrel, and should be arranged so that the pressure in forcing in the head will be evenly distributed. It is not necessary to arrange the tailed layers in perfect concentric rings as is the faced layer. In forcing in the head, hammering and knocking should be dispensed with, as this breaks and bruises the fruit unnecessarily.

For convenience in properly marking the barrels most growers will obtain a stencil made to fit the head of the barrel and giving all the necessary data excepting that blank spaces are left for the grade, size, and variety, which will vary in the different barrels packed and may be filled in with rubber stamps or other stencils.

DELPHINIUMS.

William Toole, Sr.

Among decorative plants for outdoor growth there is probably no class more broadly useful than are the Delphiniums. Botanically the name includes a number of species with hybrids and crosses of both annuals and perennials. Custom is leading to apply the name Larkspur to the annuals and Delphinium to the perennials, although they are all Larkspurs and all Delphiniums.

In this article I chose to consider the perennial section. We may, as a class, place them at the head of all the blue flowers, whether for decorative planting or cut flowers. Their coloring is not confined to blue, although that shade predominates. Among blues probably the Belladonna class is the generally favorite. The combination of light blue and white takes the lead, but some lovely shades of bright and dark blues of this class are being developed. If the fading flowers are removed the Belladonnas give a succession of bloom more quickly than others. There is a graceful inclination of the sprays to droop, which adds to their attractions.

The older Delphiniums, Formosa and Formosa Coelestina include nearly the same range of shades and markings as the Belladonnas. They are a little more rigid in outline of plant, yet we want them for their sturdy beauty. Because of old time associations we still like to see the old fashioned Bee Larkspur with its brown center, the resemblance of a bee crawling into a flower.

Among the newer creations classed as hybrids, especially among the doubles, we are given some wonderful combinations of shades, including blues and purples with changeable rose with or without white centers and hues which are indescribable.

From seed we are not yet able to secure pure whites of this class, although there is a white variety to be had which continues scarce, because it must be increased by division.

For length of spike of bloom and size of flowers some of the newer kinds both double and single are truly marvelous. The foreign growers send out named varieties which should be all alike in each variety but increase by division is too slow so choice selections of such of the varieties are scarce and after the first blooming those nearest to type are chosen to represent the kind named.

Delphiniums: "If grown in the open with plenty of room for each plant they seldom go down.

If seeds are sown early most of the kinds will produce flowers the same season.

There is a blending of pleasure and disappointment in raising

(Continued on page 29)

KITCHEN PATRIOTISM.

Suggestions by U. S. Food Administrator.

Patriotic Breads.

Here are some recipes which include the use of corn meal, rye and barley flour and other products which, if generally utilized, will release more wheat for export to our allies. These patriotic breads are easy to make and they will help in the patriotic movement, advocated by the United States Food Administration, to save wheat for our fighting men and our allies.

Rye Muffins—Sift together 1 cup of rye flour, 1 cup of white flour, 1 teaspoon of salt and three level teaspoons of baking powder. Beat up 1 egg, add 1 cup of milk and combine with the dry ingredients. Add 1 tablespoon of molasses and 1 tablespoon of melted fat. Bake in hot, well-greased muffin pans twenty-five minutes.

Oatmeal Muffins—Stir 1 cup of rolled oats and 1 tablespoon of fat into 1 cup of hot milk. Boil 1 minute, then allow to stand until luke warm. Soften 1 yeast cake in ¼ cup of luke warm water and add 1 tablespoon of sugar. Combine the two mixtures. Add 1 cup of flour and 1 teaspoon of salt and beat thoroughly. The batter should be stiff as for drop biscuit. Cover and set to rise until light—about an hour. Fill well-greased muffin pans two-thirds full. Let rise until light, then bake twenty-five minutes in a moderately hot oven.

Barley Scones—Sift together 1 cup of whole wheat flour, 1 cup of barley flour, ¼ teaspoon of salt, and 2 teaspoons of baking powder. Work into this 2 tablespoons of fat. Add 1-3 teaspoon of soda to ¾ of a cup of sour milk. Combine the two mixtures to form a soft dough. Turn out on a floured board and knead lightly. Roll out half an inch thick, cut in diamond shapes and bake in hot oven.

Crisp Corn Cakes—Sift together 1 cup of yellow cornmeal, 1 cup of flour, ½ teaspoon soda and ½ teaspoon of salt; then stir in 1 and ½ cups of sour milk. Add a beaten egg and beat batter five minutes. Add last 1 tablespoon of hissing hot fat. Pour into hot greased pie plates in a very thin sheet and bake in a quick oven until brown.

Jams, Jellies and Preserves.

Possibly the price of butter has already suggested the use of jams, jellies and preserves in larger quantities than usual. But aside from the saving in cost, there is a national service as well.

Butter is readily transported and exported, whereas these other products, which are usually put up in glass jars, lend themselves best to home or local consumption. Eat as much as possible of the home-grown products, thus releasing foods which naturally flow in large commercial channels for shipment abroad. This policy has the endorsement of the United States Food Administration and is essentially sound.

Jams, jellies and preserves do not have the same kind of nutriment as butter and are not a substitute, but the judgment of the American housewife and mother is sufficient safeguard against an excessive reduction of butter consumption.

Simple and Wasteful.

Could a housekeeper serve less than bacon, rolls, and coffee for breakfast? The answer is serve more, and waste less. Yes, waste less of what the Food Administration has asked the American people to use carefully. Bacon and wheat flour are two of these foods. The simple breakfast of bacon and rolls means eating too much of the concentrated foods needed for shipping to Europe, and too little of the perishable foods that can be used only at *home*. This substitution of the perishables for the foods that can be shipped is the small daily service asked of each householder.

: Rolls, Bacon, and Coffee— :
: A Simple Breakfast. :
: —And Wasteful! :

With this *simple* breakfast a boy of twelve will eat six rolls and all of the bacon you will allow, and then not be satisfied.

Rolls, bacon, and coffee—too much wheat, too much meat—a waste of the most precious products when we consider the world's needs; a waste of highly concentrated foods when we consider the limited shipping space available for sending food to our fighting men and allies.

How can the housekeeper get that simple breakfast in line with Americanism and simple humanity? Here is the answer. Replace the rolls with cornmeal muffins, cut the bacon to two rashers apiece, and add a generous dish of one of these locally produced perishables —apples, potatoes, or hominy grits.

This is a cheaper meal, a better balanced meal, and a less wasteful meal than that *simple breakfast*.

Establishment of Potato Grades.

Growers, shippers and distributors of potatoes met in Washington recently to discuss this year's potato crop and to determine the course of action to be pursued in the growing and distribution of next year's crop. In the opinion of this group of men, the regular channels of trade should be interrupted as little as possible, unless some unusual contingency should arise. In such event, they believe that the U. S. Food Administration is undoubtedly in position to take such action as will best serve the interests of all, and that such action would receive their hearty support and coöperation.

One of the features of the meeting was the recommendation that definite grades of potatoes be adopted. This was deemed advisable because of the tremendous economic waste due to improper grading; and also because the shipping of ungraded potatoes means cost of transportation, waste of railway equipment and labor in handling potatoes which, while worthless at destination, would have had some value as stock feed on the grower's farm.

U. S. Grade No. 1

This grade shall consist of sound potatoes of similar varietal characteristics, which are practically free from dirt or other foreign matter, frost injury, sunburn, second growth cuts, scab, blight, dry rot, and damage caused by disease, insects, or mechanical means. The minimum diameter of potatoes of the round varieties shall be one and seven-eighths (1⅞) inches, and of potatoes of the long varieties, one and three fourth (1¾) inches. In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, three per centum by weight of any such lot may be below the remaining requirements of this grade.

U. S. Grade No. 2

This grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot, or other disease, insects, or mechanical means. The minimum diameter shall be one and one-half (1½) inches. In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, five per centum by weight of any such lot may be below the remaining requirements of this grade.

For the purpose of the above recommendations no attempt has been made to provide grades for potatoes of extra finer quality and size, or for lots of potatoes composed of different varietal characteristics, or for potatoes under the minimum diameter, and other requirements of U. S. Grade No. 2.

Unless shipped in bulk, potatoes of U. S. Grade No. 1 should be placed only in new, clean sacks or barrels, which should be well filled, securely sewed or covered and, in addition to any necessary statements or marks, should be plainly marked "U. S. No. 1."

Containers of potatoes of No. 2 grade also should be plainly marked "U. S. No. 2."

A joint committee representing the growers and the shippers and distributors at this conference went on record as recommending that the Bureau of Standards be urged to take the necessary steps as soon as possible toward the establishment of 100 pounds as the unit upon which quotation of prices and buying and selling of potatoes shall be based throughout the United States.

U. S. Food Administration.

Many of our rural schools show a curious blending of architectural features. Here, for instance, we have a school house of modern design and, close by, a wood house of the early, very early, Greek period indicated by "simplicity, symmetry, monumental repose". Some schools have the wood house in the rear but that is a matter of taste.

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Horticulture at the 1917 State Fair.

Some fears were expressed in the beginning that the fruit display at the fair would fall below that of 1916 and previous years, but our fears were unfounded.

In all except color the 1917 apple exhibit equalled that of any recent year. The show of barrels was quite as disappointing as usual, and it would seem that the money offered in this class could be used to better advantage elsewhere. When single barrel premiums of $10, $8, $6, $4, and $2, covering eight leading varieties with an aggregate of $240, brings out less than a dozen barrels, it's time to quit.

The same is true of the box apple class. Premiums of $5, $4, $3, $2 and $1 with a total of $180 for ten varieties brought an exhibit of 6 boxes.

A better apple year might bring out a bigger display, but it's a question if these classes are worth while. The peck and bushel lots shown on the tables certainly made a more attractive display, are educational and satisfactory to exhibitors.

The premiums for county exhibits of fruit in the horticultural building were dropped last year. These exhibits in past years failed wholly to serve the purpose intended, viz., to exploit the possibilities in fruit growing in different counties, and instead of being real **county** exhibits, rapidly developed into one-man exhibits every one out for the money.

For the first time in modern times vegetables were shown in the horticultural building, where they properly belong. In the hands of three expert growers, Supt. Rasmussen, H. C. Christensen and Wm. Nelson, all of Oshkosh, every class and every specimen was exhibited to advantage.

Both the professional and amateur flower exhibits were just a little better than ever before shown.

With the increased interest in gardening, the amateur flower show at the fair will soon require additional space.

A complete review of all exhibits is impractical in this journal and scarcely worth while, but a few facts stand out plainly:

The number of exhibitors is increasing steadily each year in all classes and this is a mighty significant point. We want the old timer, he knows how to exhibit his products attractively, but more than all we want a big lot of small exhibitors; we want new faces every year and we are getting them.

Owing to careful and expert judging the character of the exhibits is improving until no fair can show a higher grade of horticultural products than ours.

Fakirs of all descriptions have been eliminated and horticulture has the cleanest and the most quiet as well as the most popular and attractive building on the grounds.

The department of horticulture at the fair demands more room. We need a fifty thousand dollar building alongside the present one so that what we now have can be used as an annex. We will then be able in a measure to compete with the one hundred and fifty thousand dollar grand stand as an attraction.

Lubsk Queen.

Oh, you glorious queen from the
plains of Russia,
Your beautiful skin,
Your cheeks tinted with rose and
carmine!

Your detractors say that your heart is false, that you deceive, that we should not be taught to look up to you, that you are a false, wicked queen and that we should worship at the shrine of McIntosh and Fameuse, but human nature is frail and weak and will forever bow to beauty.

And they all paid you homage at the Fair until your consort, Dudley, also from Door Co., turned all green with envy.

Facts and Figures on Spraying.

Prof. R. H. Roberts, well known to all who attend our conventions, puts in his spare time during spring and summer conducting spraying demonstrations. Mr. Roberts reports on the results obtained in one orchard in Fond du Lac county as follows:

"Regarding the report of our spraying results at the Thomas Roach farm the fruit has but lately been sold so that we could definitely sum up our results.

"From these trees which we helped Mr. Roach to spray we obtained eighty-five per cent of the first grade fruit, twelve per cent of the second grade, and three per cent culls, which sold at an average price of $1.14 per bushel. From the trees which were unsprayed, there was no first grade fruit, but thirty-seven per cent was second grade, the balance or sixty-three per cent being culls.

"The average price of this fruit was twenty-four cents a bushel. It is also to be noted that the unsprayed trees had a smaller crop than the others, due to smaller-sized fruits and the dropping of a large per cent of the crop due to apple scab. On the basis mentioned, however, we would have the gain of ninety cents per bushel, due to spraying. The cost including labor and material, was sixteen cents a bushel, or a net gain of seventy-four cents. The cost per bushel was high owing to a light yield as the cost per tree was about twenty-four cents. These figures apply to the variety, Gano.

"These results are due almost entirely to the spraying which Mr. Roach did while we were not present, as our spray plat included but a small portion of the trees on which we gathered data. The season gave one of the worst infections of apple scab that has been known, so we feel quite pleased with the results which we have obtained this year and feel confident that these can be duplicated by any farmer who follows carefully the time of application and the use of proper materials.

"The spray used this year was the commercial lime sulphur solution, one gallon to forty gallons of water, to which was added one and one-half pounds of powdered arsenate of lead to each fifty gallons of water.

"The applications were made as follows:

"(1) Just after the blossom buds separated in the cluster so as to permit the covering of their entire surfaces. This was just previous to the blossoms opening (2) Just after the blossoms fell. (3) Two weeks after the second spray. (4) About the first of August."

Results in 1917.

These facts and figures on spraying were submitted by Prof. Roberts just one year ago, but no opportunity was found to present them seasonably until now. In reference to a recent inquiry Prof. Roberts writes under date of Sept. 24th as follows:

"The results this season have been very similar to those of last, and also quite satisfactory. Two points of especial interest have been developed in checking over results. The first is the apparent failure of spraying to entirely control a bad infestation of curculio on apples. It would appear that in cases of other infestation, sanitary measures as cultivation or hogs would be needed to insure clean fruit. This conclusion could be based on the fact that at one of our demonstration orchards this year we entirely controlled apple scab, but had considerable curculio work on the fruit."

"The second point is the approximate completeness with which we have controlled apple scab. An illustration of this would be the results at Swartz Brothers, Waukesha, this year. I mention this because that is the only place where we have made definite counts of sprayed and unsprayed trees there was an even sparayed trees there was an even 100% of infected fruit and 74% of the fruits were so badly scabbed as to be worthless for market. On the sprayed trees 89% of the fruits were free from infection, ½% were severely scabbed, 2% had sufficient infection to place them in second grade fruit and the remaining 8% had infections ranging from mere dots in size to ⅛ of an inch in diameter."

"The cost has been slightly higher this year owing to more expensive chemicals and labor charges. The expense of the above work was .091 a bushel. This is lower than the average owing to the good yield of fruit on the sprayed trees, the range of expense being from 6 to 16c a bushel owing to the yield. The material used for the demonstration work was lime sulphur and arsenate of lead the same as last year."

Plant tulips, hyacinths, narcissus and crocus now for spring blooming. A good list of varieties will be found on p. 14 of our Annual Report.

A Tale of Mystery, a Fish Tale.

On a busy day recently there came over the telephone the following interesting news item: "President Rasmussen and family spent Saturday and Sunday with friends in Madison; Mr. Rasmussen spent Saturday fishing and caught a twenty-three pound pickerel."

As the informant was known to the editor as a thoroughly reliable person, the item was filed for future use, and the day's work went on as usual, only the thoughts of the blue waves of Mendota, a gently rocking boat and the joys of deep water fishing would intrude in a most unseemly manner, where only canning, drying, and Liberty Gardens belonged. "The 1917 State Fair horticultural exhibit excelled in extent and,"—"twenty-three pound pickerel,"—"some fish, I wonder what spoon he used,"—variety that of 1916 by at least—"twenty-three pounds,—why that's the biggest fish taken out of Mendota since the days of Billy Dunn and Grover Cleveland, and not a word in the Madison papers. Some mystery here."

Land lubbers who rave over the pleasures of golf, knocking a little white ball across lots into holes and out again, silly business for grown men and women; baseball fans and even hunters really miss the real great big fun in life because they never go fishing.

And of all fishing, the deep water fishing is the kind that's best worth while. You sit in the stern of your skiff with another fellow to row, of course, your steel rod and patent reel grasped firmly in your good right hand, the glistening spoon with its enticing bait whirling fifty or one hundred feet astern and sending a delightful tremor through your arm; there you may sit for an hour or perhaps for two before anything happens to wake you from your delightful reverie, for you have the true fisherman's patience and your thoughts are of how good it is to be alive on this beautiful September day.

A sudden tug awakens you and now life is really worth living, for you have a strike! The line sings through the reel, sweetest music in all the world to the fisherman's ear, the rod bends until the tip is submerged and the fight is on, for he is a big one. It's a match between your skill aided by the patent reel and the instinct and strength of this four-foot muckie or pickerel. You "play" him, oh, boy, how carefully you play him, with thumb on the release you pay out just enough line, not too hard a pull or you will lose this twenty pounder, not too slack or,—one snap of those saw toothed jaws and your prize is gone with your spoon and as much of your line as could be grabbed in a mouthful. For ten, twenty, maybe for thirty minutes you play him. You are breathing hard, your nerves tingle to your finger tips as slowly, inch by inch, you reel in until your catch is in sight.

There is no use in telling you land lubbers about it, because you don't know and never will know the joy of that minute when you are first able to distinguish the outlines of your graceful, glistening prize. And as in all of life, the pleasure is tinged with doubt and fear for you haven't landed him yet. For all you know there may be just one more fight in that old timer and with what care you handle the line and gaff until finally the catch is over the side

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company

Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

and the day's fishing is over. You've got the big one and hauling in perch and bass seems like sacrilege now. So back you go, get out the scales and the camera and then you go boasting all over the place, and you have the right and the license to do it.

Here is where the mystery begins: For the writer proclaims this fact without fear of contradiction: Any man who catches a twenty-three pound pickerel in Mendota or elsewhere and keeps the fact to himself for two weeks is either too modest for this world or else the fish didn't really weigh twenty-three pounds, or else he fell asleep in the September sunshine and dreamed a dream of a twenty-three pound catch. But that won't hold, because the news came from his host, who is a most ardent fisherman and a man of undoubted integrity. But why didn't Mr. Rasmussen say something about it? Perhaps he didn't know anything about it then or now? The mystery deepens.

Here we have a perfectly authentic story of a twenty-three pound fish, but no head or tail to it. Anyway, it's something to take our minds off other and more serious things.

The Apple Grading Law.

The enforcement of the apple grading law is vested in the Commissioner of Agriculture and has been assigned by him to the division of entomology, of which Dr. E. D. Ball is chief. Circular No. 6, State Department of Agriculture, contains rules and regulations laid down by the department as well as a copy of the law.

Every person in the state who ships a barrel of apples should read this circular carefully before nailing the head in the barrel. Copies may be had on application to the Department of Agriculture, State Capital, Madison, or to this office.

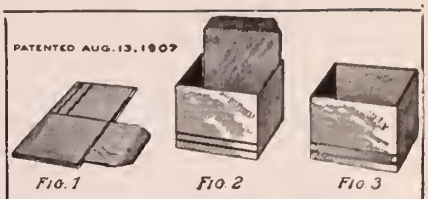
Don't Believe All You Hear

Writers of popular fiction, including city bred people who furnish advice to gardeners, fruit growers and gardeners, amuse but rarely instruct. As their purpose in life is entertainment and making a living, they should not be taken too seriously.

Choose Wisely

"Save seed from your gardens for next year's crop." "Seed will be very scarce next year." This is one line of popular fiction that is being circulated just now. We had the fruit jar comedy last spring. The press implored us to dig up every forgotten fruit jar, even to collecting from garbage so that the unprecedented shortage of glass jars might be overcome. As a matter of fact, there was never a shortage of jars, nor was the price advanced materially.

This seed saving scare is along the same line so far as the ordinary garden and flower seeds used by the amateur are concerned. The prospects are for a supply sufficient for all needs with the exception of parsnip. It is all well enough to save seed if you know how, but the average amateur who saves bean seed, for instance riddled with anthracnose would be apt to shed some tears next summer, over the horrors of war. Seed growing and saving is a highly specialized business and is best left to seed growers and market gardeners of long experience.



BERRY BOXES

Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

McKAY NURSERY COMPANY

MADISON, WISCONSIN

Nursery Stock of Quality

for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

Divide and transplant peony, phlox and many other hardy perennilas now.

Crying Peace When There Can Be No Peace.

"The men who are speaking and writing and printing arguments against the war now, and against everything which is being done to carry on the war, are rendering more effective service to Germany than they ever could render in the field with arms in their hands. The purpose and effect of what they are doing is so plain that it is impossible to resist the conclusion that the greater part of them are at heart traitors to the United States and wilfully seeking to bring about the triumph of Germany and the humiliation and defeat of their own country."

"Anybody," he said in substance, "who speaks against the government or obstructs its policies in the prosecution of the war against Germany is a traitor at heart and wants Germany to win.

"Everyone was privileged to express an opinion on the advisability of the war before hostilities were declared. After the United States entered the war, discussion was closed"—Elihu Root.

"I do not think that I am an alarmist, my friend; I have tried to view the situation calmly and without passion, but I am fully convinced that we are in the valley of decision, and that the great Armageddon between autocracy and democracy is on. In that great battle we cannot choose what side to take; there is but one side for Americans. Liberty is their birthright. Freedom's cause was bequeathed to them by sires who died at Lexington and Valley Forge and Yorktown that this great nation might live. Their voices come to us down the long years that have passed since then and they plead with us to keep the faith.

"The little people of the world stretch out their arms to us and appeal to us for protection; from the stricken cities and fields of Belgium and Servia and France, from the white lips of starving children and the gaping wounds of murdered women there comes the cry of outraged humanity to America, the great, the prosperous, the free; and thank God, America has heard the cry and is girding her loins for the conflict. She cannot lose for she fights for the Eternal Cause of Human Liberty.—*Hon. J. B. Winslow, Chief Justice State Supreme Court.*

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

The Kickapoo Valley WISCONSIN'S FAVORED FRUIT DISTRICT

Our Specialty: Planting and Developing orchards for non-residents. A few choice trees for sale. If interested, write us.

KICKAPOO DEVELOPMENT COMPANY

GAY MILLS, WISCONSIN

Potato "Dont's."

1. Don't injure the selling and storing quality of your potatoes by careless digging.
2. Don't glut the fall market and injure your winter market by placing large quantities of ungraded stock on the market at harvesting time.
3. Don't ship any frost-damaged potatoes. It is disastrous.
4. Don't demoralize the already overburdened transportation facilities by shipping cull potatoes. Unless potatoes are extremely high in price, culls will not bring transportation charges.
5. Don't overlook the advantages of "machine sizers." They are proving of great value in many shipping sections.
6. Don't expect machine sizers to grade for quality—only human hands can grade out the defective tubers.

An Attractive Home Means Contentment

Keep the ch.ldren at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in th s work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

7. Don't mix No. 1 and No. 2 grade potatoes. There are customers who desire each separately, but do not want them mixed.

8. Don't overlook the potato grades recommended by the United States Department of Agriculture and the United States Food Administration.

U. S. Dept. of Agr.

HARDY OLD FASHIONED PLANTS

OUR SPECIALTY

The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices

WILLIAM TOOLE & SON

Hardy Plant and Pansy Farm **Baraboo, Wis.**

America Fights in Holy Cause.

"The soldier who follows America's flag fights in a holy cause. He is more truly consecrated than the Crusader who fought to deliver the Holy City from the infidel."—*Winslow.*

Are People Honest?

On Monday morning of State Fair exactly one hundred apples were placed on a table 4 x 5 feet in the exhibit of the Horticultural Society. The table stood out in the open and through 5 days approximately 200,000 people passed by and around it. Not an apple was stolen or even disturbed during the entire week.

(Continued from page 21)

Delphiniums from seeds. The disappointment comes so often from poor seeds. No other kind of plants more easily bears transplanting either in the spring or in the summer after the first blooming period. Because of storms it is well to be prepared to stake the plants, especially if they are grown in the shrub border. If grown in the open with plenty of room for each plant they seldom go down.

There is a distinct section called Chinese, with smaller growth and more finely divided foliage. This class includes the Siberian. In this class may be had an abundance of clear white as well as various shades of blue and purple. If kept cultivated in the summer and given slight protection in the winter the Delphiniums are very enduring and will stay by one for many years.

The 1917 Cherry Harvest in Door Co.

Door county's 1917 cherry crop will bring the growers approximately $200,000, it reaching about 250 carloads, the estimate made early in the season. Each car contains 500 cases, and each case 16 quarts, making the total crop 2,000,000 quarts. Both the Early Richmond, the early cherry, and the Montmorency, the late cherry, were good crops. The quality of both was also excellent but the late cherry was better not only in quality but also in yield and brought a better price. The price on the outside market ran from $1.40 to $1.75, being very satisfactory to the grower.

EXCEEDS TOTAL OF THREE YEARS.

The 1917 crop exceeds the total shipments of the combined crops of 1914-15-16. One day's shipment this season was equal to the entire crop of 1913.

There was no trouble in securing a market, the greatest difficulty being in supplying the great demand that there was for Door county cherries. Shipments were made as far west as Tulsa, Oklahoma, and a number of shipments were made to Cleveland, O. Minneapolis furnished its usual good market, and shipments were made into Chicago, which is usually supplied almost entirely by the Michigan cherries.

PICKERS RECEIVE $30,000.

During the five or six weeks that the pickers were employed in the orchards they were paid approximately $30,000. This large amount of money is paid almost entirely to women and children, and the amount earned is additional money brought into the families. While a portion of it is earned by young people who come here from outside, the fact that these young people are here places a large amount of the money in circulation that goes into local business channels.

The crop being an exceptionally large one, and picking being done on a number of young orchards where the trees are small, requiring no ladders, the pickers enjoyed the work and made good money. They are all anxious to return to Door county another year and help harvest the crop. The picking problem is one of the easiest problems of the cherry business. The different organizations represented here during the season by the pickers were the Y. M. C. A., Boy Scouts, Camp Fire Girls, Green Bay Orphans Home, besides the hundreds of pickers who were not connected in any way with any organization.

The Co-Operative Co. introduced Indian pickers this season, being the first to engage the services of the natives for this work, and they proved to be well adapted to it.

EIGHTY CARLOADS TO FACTORY.

The Reynolds Preserving Company will be about through canning cherries this week, although it might take a couple of days next week to clean up what comes in. The company has used about eighty car loads of the crop, 40,000 cases. The price on the first 30,000 was about $1.00 per case, but what was purchased above the original contract of 30,000 a much higher price was paid. The fact that part of the crop was being canned here had a tendency to stiffen the outside market, as there was no surplus to dispose of. The quality of cherries canned by the Reynolds Company is of the very best and a ready market is found for them.—*Door Co. Democrat.*

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON

SHEBOYGAN, WISCONSIN

Farm for Sale

With orchard that cannot be beat in Waushara County

180 acres good sand loam adapted for potatoes, corn, clover and rye, beautiful trout stream flowing through pasture land; about 20 acres timber.

Orchard and Home 500 apple trees in their prime. Buildings worth $3000 excellent location

This property is a money making bargain to someone who likes to handle apples.

Price $45.00 per acre.

Appleton Fruit Farm

Pine River, Wisconsin

Quality Stock

Strawberries

Native Plum Small Fruits

Apple

WISCONSIN GROWN

for Wisconsin Planters. Read our Price List before you buy, and save money.

62nd Year

Kellogg's Nurseries

Box 77, Janesville, Wis.

(Continued from page 20)

It is to be hoped that all growers of the state may appreciate the benefits which may come from this law, and by their cooperation render the enforcement of the law easy. It is only when all apples from this state are packed strictly in accordance with the law that the reputation of our apples will be bettered and prices to the grower raised.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis

MADE IN WISCONSIN

INSECTICIDES AND FUNGICIDES

Lime Sulphur

Arsenate of Lead
Dry and Paste Form

Bordeaux Mixture **Nicotine Solution**

Kerosene Emulsion, Etc.

CREAM CITY CHEMICAL WORKS

774-778 Kinnickinnic Ave. MILWAUKEE, WIS.

WRITE FOR CIRCULARS AND INFORMATION

Annual Convention

State Horticultural Society

Madison, December 11, 12, 13, 1917

A bigger and better program than ever, both amateur and professional gardening topics with special program for Liberty Gardens.

Storage of fruits on the farm and the marketing of fruits will be discussed by specialists from the U. S. Department of Agriculture.

Two Hundred and Fifty Dollars Cash Premiums.

Save Fruit and Vegetables Now.

We must feed the world, let's get together and plan how to do it.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, November, 1917. | Number 3

Vandals and Vandalism.

We hear a great deal about Huns these days but not so much about Vandals altho we have in our midst plenty of the latter. Not necessarily descendants of the real tribe of Vandals but those falling within the definition, "one who wilfully destroys or mars a work of art or literature or wantonly mars anything beautiful." Of these we have many. Most of them own automobiles. They drive miles into the country where they are not readily identified, raid orchards and gardens, dig wild flowers and even invade door yards. The following from a Milwaukee paper shows a mild form of vandalism.

"The popularity of the so-called "bittersweet" berry has proven so great this year that the woods and fields within a radius of twenty

(Continued on page 39)

This is not, unfortunately, a Wisconsin tree; we are too young yet to have such majestic roadside trees, but such may be ours in time. This Connecticut Elm is probably two-hundred years old. If we plant carefully, prune wisely and protect from enemies our roadside elms, we may leave to coming generations such a heritage as this. Some of us will not leave much else. Let us plant and care for a tree.

How to Store Vegetables for Winter Use.

Prof. J. G. Moore

This fall, more than ever before, it will be to the advantage not only of each family, but to the state and nation as well, if everyone who has a garden will store well the vegetables grown for winter use which are suitable for storage.

In many instances storing will be the best way of preserving vegetables for this winter's use. Prices are almost certain to be high, and storing is cheaper, requires less work, and with many crops, the product is better than if canned or dried. More of the characteristic flavor of vegetables is preserved by storing than by any other method.

WHERE TO STORE

The places in which the home gardener may store his crops successfully are house-cellars, outside cellars, or caves and pits. All of these are not equally well adapted for storing all kinds of vegetables, but for a majority of kinds will answer the purpose very well. Where more than one type of storage is available greater success will be had if in selecting the storage, the storage requirements of the vegetable and the time it is desired for use are taken into consideration.

STORING IN THE HOUSE-CELLAR

The house-cellar is by far the most frequently used storage place of vegetables grown in Wisconsin gardens. If it does not contain a furnace and the temperature does not fall below the freezing point, there will be little difficulty in keeping the vegetables well into the following spring. If, however, there is a furnace in the cellar, then the difficulties of successful storage are greatly increased. In such cellars a small portion, preferably well removed from the furnace, should be partitioned off. The storage room should possess at least one window which will make temperature control easier. The tighter the partition fits, the better. As the storage room probably will be quite permanent, it is advisable to exercise considerable care in constructing the partition. An insulated wall or a double wall with a dead air space between is to be preferred. A heavy cement wall is satisfactory. A single board wall is not to be recommended, but a storage room with such a wall gives better results than storing in the same room with the furnace. The storage room should preferably have a dirt floor. Proper storage of vegetables requires a certain amount but not too much moisture. A cement floor is too dry.

REQUIREMENTS OF SUCCESSFUL STORAGE

The three chief essentials of successful storage are—sound vegetables, proper temperature, proper moisture. With certain vegetables maturity and ventilation are also of prime importance. Many people overlook the first of these storage requirements. Careful selection should be made of all vegetables to be stored. Soundness should include freedom from disease conditions likely to cause rot, and from mechanical or insect injury which provides an entrance for rot organisms or favorable conditions for their development. It is not the loss of the affected vegetable which is so important, but the fact that decay once started may destroy a considerable portion of the stored crop. The importance of soundness, however, does not stop with the selection of sound specimens. It includes careful handling during the storing process. All of us handle fruits which are to be stored with the utmost care, but practically disregard the bruising of vegetables. While the results are not so marked in the case of vegetables, often much of the loss in storage may be traced directly to rough handling.

STORAGE TEMPERATURES FOR VEGETABLES

The best temperature for storing vegetables may vary considerably for different kinds. There are two fairly well defined limits for most vegetables. The temperature should not be so low that the vegetables freeze. It should not be so high as to encourage premature growth. High storage temperature is also more favorable to the development of most rot organisms, therefore with most vegetables the desired temperature is one close to the freezing point. Some vegetables, as cabbage, will stand slight freezing without injury, but it is usually safest to maintain the temperature of the storage room at not less than 31 or 32 degrees Fahrenheit. Vegetables will keep well at somewhat higher temperatures, 34 to 36 degrees, but only in the case of squash and pumpkin is a relatively high temperature to be preferred.

SUPPLY SUFFICIENT MOISTURE

Large losses occur in storage because of improper moisture supply. The greater part of these losses is due to lack of sufficient moisture. The moisture content of all vegetables is high. When placed in a dry atmosphere, they lose moisture very rapidly and with it their

quality. With the exception of onions, squash, pumpkins and dry seeds, as beans, a relatively moist atmosphere is desirable. Excessive moisture is injurious, as it furnishes favorable conditions for rots. The aim, therefore, with most vegetables, is to keep the surroundings sufficiently moist to prevent wilting.

SOME OTHER REQUIREMENTS

Good ventilation is desirable for the best storage. It helps to regulate temperature and moisture, removes foul odors and may help to prevent decay.

Proper maturity influences storage. With some crops full maturity is necessary, with others slightly immature specimens store best while with some the stage of maturity makes little or no difference.

Care of Bush Fruits.

Among the farm operations which engage the attention of the small fruit grower in the north during the late fall, winter, and early spring are the pruning of the plants and their protection from drying winds, snow, and cold.

CURRANTS AND GOOSEBERRIES.

Both of these fruits have stood without injury the extremes of low temperature and drying winds which prevail in the northern Great Plains region. These fruits, therefore, need no protection against the cold or winds of winter. Sometimes, however, in regions having a heavy snowfall, branches of the currant are broken down by the weight of snow and sleet. This danger may be easily avoided by drawing the branches together and tying them with coarse string. The tying may be done at any time after the leaves fall, but it is better to do this about the time the ground begins to freeze.

This period between the falling of the leaves in autumn and the starting of growth in spring is the season in which currants and gooseberries are pruned. The ideal currant bush at which the pruner should aim has six to

Abies concolor: White Fir. A beautiful pyramidal evergreen with pale green or silvery foliage. Native of Oregon where it grows to a height of two hundred feet.

eight main branches, while the gooseberry has eight to twelve. None of these branches should be over 3 years old. Two or three of the main branches of the currant and three to four main branches of the gooseberry should be removed each season, the older branches being cut out and a like number of the most vigorous canes of the current season's growth left to take their place. All other young canes and all canes bent to or near the ground should also be removed. If this system is followed each year after the bushes reach the age of 3 years, pruning will be relatively simple and the plantation kept in good condition.

RASPBERRIES AND BLACKBERRIES.

Raspberries and blackberries need winter protection in many parts of the North where low temperatures and drying winds prevail, especially where the snow covering is light. Certain varieties need protection, while others endure the same conditions without injury. Experience will indicate which varieties need this. Where the cold and drying winds are severe, as in the Great Plains region and in Colorado, canes of the tender varieties must be covered with soil. This should be done as late as possible, yet before the ground is frozen. Some of the soil should be removed from one side of the row either with a hoe or plow, the canes inclined to that side until they are in a horizontal position and then entirely covered with soil to a depth of 2 or 3 inches. As the canes of the blackberry are more brittle than those of the raspberry, they must be bent over with greater care. Often in practice the canes are bent over so that the top is alongside the next hill, some soil thrown over the ends of the canes in order to hold them down, and the remaining parts covered by the use of a spade or by throwing a shallow furrow over the canes with a plow. The canes should be uncovered in spring before the buds start, but not until after all danger of hard freezing is past. Straw and other similar materials have sometimes been used to cover the canes, but are unsatisfactory, as the air circulates through them and does not prevent winter injury.

(*Continued on p. 36*)

When the snowfall is heavy throughout the winter, it may cover the canes sufficiently to afford all the protection that is needed. Sometimes, however, in order to be adequately protected by the snow, the canes should be bent over. They may be held in this position by placing a few clods of earth on the tips; or sometimes forked sticks are used to pin them to the ground. In other cases rails or poles are placed across the canes to keep them in a reclining position. The tips, which are the tenderest part of the canes, should be nearest the ground and be best protected.

Usually no pruning is given either the raspberry or blackberry just before or during the winter. When the canes are to be protected with soil, however, all the weaker canes, as well as stronger ones not needed for the crop the following season should be removed. This thinning out of the canes will reduce the cost of covering. In the spring if the canes of the raspberry are long and are not to be supported by stakes or a trellis, the ends should be cut back. If cut back to a height of 3 feet, the canes should be able to support their crop, keeping the berries out of the dirt. Sometimes when the canes are slender it will be necessary to cut them back to 2½ feet in length. The side branches of the blackberries are usually pruned back in early spring. The length at which the lateral branches should be left depends on the habit of the variety. In some sections and with some varieties no pruning at this time is necessary, and experience in each locality must be the guide as to this.

Winter Protection of Strawberries.

In all except the extreme southern and western districts the autumn or early winter is the season in which the strawberry fields should be covered with a mulch, partly to protect the plants from the continual freezing and thawing which occurs in many sections, partly to conserve moisture and keep down weeds during the following spring and during the fruiting season, and partly to keep the berries from contact with the soil when they ripen. This mulch may consist of some kind of straw or hay or of stable manure containing a large proportion of straw, but it should be free from weed seed. Wheat, rye, oat, and buckwheat straw, long-leaf pine needles, prairie hay, marsh hay, salt marsh hay, and other materials are frequently used for this purpose. The mulch should be placed on the berry field after the ground freezes and before it is covered with snow. If a rain follows the spreading of the mulch, less trouble will be experienced from scattering by the wind. The mulch should be spread evenly over the whole field. If available, sufficient material to make the depth of the mulch when it settles from 2 to 3 inches should be used.

Stable manure, though frequently used, is not always satisfactory. In some sections it causes a vigorous leaf growth the following spring and actually lessens the yield of berries. If either the stable manure or the straw contains weed seed, it may infest the berry field with weeds to an extent which decreases the yield and causes much expense in cleaning. When stable manure is applied, the solid portions as far as possible should be put between the rows and that part containing more straw placed over the row. In the spring before the plants start growth, sufficient straw should be removed from the rows to allow the plants to grow through the mulch. This straw may be thrown into the space between the rows. Where the ground is weedy, it will often be necessary to rake the mulch upon the rows of plants and cultivate the field. The mulch is then returned to the middles between the rows of plants to be left until after the picking season.

Transplanting Evergreens.

When shall I transplant evergreens? This is a common question and shows that there is a difference of opinion. Bailey says that this difference of opinion means that there is more than one season in which they may be moved. Possibly, in climates less severe than this; but for Wisconsin, where we have six months dormant season, it is expecting too much of trees to survive when transplanted in the fall. Especially is this true of evergreens which on account of their dense foliage dry out more than deciduous trees.

One thing is very certain, the fall is *not* the best time in Wisconsin to transplant evergreens. Further, the most successful planters agree that best results are secured by rather late spring planting, after active growth has begun. In all cases transplanted evergreens should be protected from sun and wind for several weeks by some temporary shelter.

Cold Frame for Bulbs.

A member asks,—"Can you explain the method employed in

using a cold frame for forcing bulbs? I have seen this advised in a fall catalog:"

The cold frame may be used to advantage as a storage place for bulbs potted or in flats.

The florist provides a shed or other room kept dark and a few degrees above freezing where he packs away the pots and flats (shallow boxes) of bulbs and covers them with sphagnum or sand. This treatment provides ideal conditions for root growth without top growth—the first requirement in bulb forcing. After a few weeks the pots may be brought in as required all through the winter.

When the amateur attempts to imitate the florist he finds himself handicapped by lack of moist, darkened storage room that can be kept at a low temperature.

The old fashioned farm cellar with earthen floor and banked windows would be ideal, but the city dweller's cement floored cellar with furnace is about the poorest place to be found for the first stage of bulb forcing. Constant, almost daily attention is required to control moisture at the roots even if the temperature can be controlled. Here is where the amateur may employ a cold frame or hotbed pit if he is fortunate enough to possess one. The potted or boxed bulbs covered with sand, the frame banked with manure and the frames covered with burlap or straw are accessible at any time. Even if the later ones freeze no harm will result.

A Charming Phlox.

W. J. Moyle.

The past summer has been very favorable for the growth and blooming of the phlox and one of the newer sorts that has particularly appealed to me is Madam Paul Dutrie. It has a good constitution, is a vigorous grower with large panicles of the most delicate rosy lilac flowers imaginable

Perennial phlox, Miss Lingard; white with delicate pink center. The phlox is a hardy plant and may often be found in neglected or abandonded gardens struggling with grass and weeds. This, however, is not a good reason for starving this courageous flower by compelling it to fight for sunlight and nourishment in sod or in a barren strip by a house wall. The splendid specimen shown here was given a fair chance.

Another good old stand by with me is Richard Wallace. This is a tall growing variety and is extremely hardy, never having winter killed with me even when planted in the most exposed places. The florets are large, pure white with a bright carmine eye.

Miss Lingard, one of the older varieties is also one of if not our best white, good grower, waxy white and a fine cut flower and, if kept cut back, an everlasting bloomer.

Mice and Rabbits

Pine mice and cottontail rabbits occur throughout the eastern portion of the United States and do much harm to fruit and ornamental trees and shrubs as well as to garden produce and other farm crops.

Pine mice are seldom seen on account of their molelike habits, for they live in their own underground burrows or in mole runways. The presence of these mice in mole burrows can usually be detected by an occasional opening that they make to the surface from the runway. Pine mice are not so prolific as their near relatives, the meadow mice, but protected as they are by their underground habits they sometimes become abnormally abundant. This is especially apparent in states where hawks and owls, which are enemies of these rodents, are destroyed. The mice live upon roots, seeds, succulent vegetation, and bark of young trees, and are very destructive to sweet potatoes and other tubers as well as to trees and shrubs.

The most practical method of controlling this pest is by poisoning. Sweet potatoes cut into small pieces have proved to be the most effective bait. They are prepared as follows:

Sweet-potato bait.—Cut sweet potatoes into pieces about the size of large grapes. Moisten 4 quarts of these and drain off excess moisture. Slowly sift over them one-eighth ounce of powdered strychnine (alkaloid), using a pepper box or salt shaker for the purpose, and stir constantly to distribute the poison evenly.

One or two pieces of the poisoned sweet potatoes should be dropped into the tunnels through the natural openings, or through openings made with a stick. A systematic use of this poison invariably results in an almost complete extermination of pine mice. These pests are also easily trapped, but owing to the extra time and labor required, this method does not compare favorably with poisoning.

Cottontail Rabbits.

Cottontail rabbits breed rapidly, and in spite of the inroads made upon their numbers by predatory animals, such as the larger hawks and owls, cats, and dogs, and the excellent sport they furnish hunters, they sometimes become so abundant as to occasion serious losses. They eat all sorts of herbage, preferring such succulent foods as vegetables, clover or alfalfa, fallen fruits, etc. When snow cuts off the supply of their favorite food, they frequently kill trees and shrubs by gnawing the bark. In this way they often cause serious financial losses to nurserymen and orchardists.

The majority of eastern states protect rabbits during the greater part of the year, although half of these states have provisions enabling farmers and fruit growers to destroy the animals in order to protect their crops and trees.

In localities where cottontails are sufficiently abundant to be a continual menace, the safest and most nearly permanent method of securing immunity from their ravages is to fence against them. It has been found that woven wire netting of 1½-inch mesh and 30 inches high will exclude rabbits, provided that the lower board of the fence is buried 5 or 6 inches below the surface of the ground. In cases where a small number of trees are concerned, a cylinder of similar wire netting around each tree, if so fastened that it can not be pushed up close against the tree, serves the purpose more economically.

(May we add to the above what everyone in Wisconsin knows, that fencing against rabbits in this climate is usually a waste of time and money. Even a light fall of dry snow followed by a wind will provide a rabbit highway over the fence we built with so much care that would delight the heart of any Good Roads advocate. Better spend more on poison and also buy a gun.—*Editor.*)

When the law permits, poison can often be used to advantage, especially at times when the natural food of the rabbit is scarce. The following formulas have been employed with considerable success:

Poisoned Oats.—Mix together 1 ounce of powdered strychnine (alkaloid), 1 ounce of baking soda, ⅛ ounce of saccharine, and 3 heaping tablespoonfuls of flour. Stir with enough cold water to make a creamy paste and apply to 12 quarts of good, clean oats, mixing thoroughly. This same creamy paste can also be applied to orchard prunings. The smaller twigs should be cut up into 2 or 3 inch lengths and the poison applied in the same way as with oats.

Poisoned green baits.—Cut up a supply of carrots, parsnips, apples, or other similar baits into cubes ½ to 1 inch in diameter. Insert in each a small quantity of powdered strychnine or a small strychnine crystal. When a larger quantity is to be prepared, the powdered strychnine can be dusted over the bait by means of a salt shaker in the proportion of ⅛ ounce of strychnine to 2 quarts of the baits.

The poisoned oats, prunings, or

green baits are dropped along rabbit trails or in places frequented by the rabbits, care being exercised in placing them *to prevent any possible injury to live stock.*

The following poisoned wash has proved highly satisfactory in the west and promises to be one of the most popular methods of protecting trees from rabbits:

Poisoned tree wash.—Dissolve 1 ounce of strychnine sulphate in 3 quarts of boiling water and add ½ pint of laundry starch, previously dissolved in 1 pint of cold water. Boil this mixture until it becomes a clear paste. Add 1 ounce of glycerin and stir thoroughly. When sufficiently cool, apply to the trunks of trees with a paint brush. Rabbits that gnaw the bark will be killed before the tree is injured.

Many other repellent tree washes have been used with varying success. Other means of controlling cottontail rabbits, such as trapping and driving, are usually too slow and laborious to warrant their use.

—*U. S. Dept. of Agriculture.*

Vandals and Vandalism

(Continued from front page)

miles of Milwaukee have become practically depleted.

Ever since the latter part of September when the berry, which is a creeper with a reddish yellow color, became ripe autoists have been driving out into the country and picking large quantities.

Hedges in the vicinity of the cement mills on the upper river, St. Francis and Menomonee Falls were covered with the berries in former years, but it is impossible to get them at these places unless one goes very early in the season. It is now necessary to make trips of from thirty to fifty miles. On the Fond du Lac road, between Milwaukee and Menomonee Falls, there is a hedge which is covered with the vine for about 100 feet but every berry, it seems, has been picked. Many were to be found in the vicinity of Meeker, just beyond Menomonee Falls, early in the season, but these have almost all disappeared. Some autoists now report that they have been able to find the berry in the vicinity of West Bend and St. Michael's, a drive of about forty miles over good roads."

Twenty years ago such vandalism was confined to the outskirts of cities and towns and committed only by reckless boys. How much of this sort of thing was done then by people who owned carriage teams? Which only shows how many different kinds of people own automobiles.

A fence row glowing in beautiful autumn colors, a joy to every passer by if undisturbed means nothing to the vandal except what he may plunder for his or her own selfish needs. The feminine pronoun is used here advisedly for it is a matter of common knowledge that in these matters women are often as bad or worse than men. Since the automobile has become common property wild flowers have been swept clean from fields and roadsides near cities never to return and are rapidly disappearing elsewhere. It is thoughtlessness and selfishness, lack of consideration for others that prompt these acts. In short it's ill-breeding. The real gentleman or lady never trespasses knowingly on the rights or pleasures of others.

LET US REMEMBER!

By Cleveland Moffett.

Let us remember that in a year or two the white souls of a million dead soldiers, American lads, our dear sons, will be speaking to us from their graves, on the battlefields of Europe, asking what we did over here to stand behind them, what we did over here for the cause of World Liberty. Was it merely a matter of talking? Was it merely a matter of signing checks and folding bandages?—Of cold business efficiency? Is that all? Did we face no personal danger? Did we suffer no personal inconvenience? In what way did we actually with our own bodies get into the trenches of sedition here? Into the foul and slimy labyrinths of treachery and disunion that are spreading and burrowing here into the heart of this nation? That is what the white souls of a million American lads, our sons, will be asking us in a year or two from their graves on the battlefields of Europe. And we must answer them. God! Let us answer worthily.

Fruit at the Convention.

Altho this was a poor apple year in Wisconsin the state fair exhibit was very good. If our apple growers both amateur and professional will give a little time right now to wrapping and packing apples our convention exhibit may easily be the biggest and best we have ever had. If you leave it all to the other fellow we may not have much. The potato growers will hold a convention in Madison late in November and the growers are planning to exhibit *carload* lots of spuds! Surely we can show pecks and bushels, if we try.

Prune the grape vines and lay them on the ground ready to cover with earth as soon as there is danger of the ground freezing. Prune severely, as too much wood and foliage means small, poor grapes.

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Secretary W. S. H. S., Madison, Wis.

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Convention Program.

While the convention program is still in the making and far from the final stage enough has been accomplished to assure a profitable three day session, rather better than usual. It's slow work and no fun making up a program. What do the people want? Shall we have new subjects for discussion or the same old ones? Shall we have outside speakers or our own members? Shall it be mostly amateur, largely professional or half-and-half? These are just samples of the questions that semi-annually vex the program maker and when these problems are settled in his mind, after a fashion, months ahead, there comes the other and bigger job of getting the right people to discuss the right subjects. If you begin too early in the season the persons solicited hesitate to promise so far in advance; if you wait too late replies are often delayed so that it is too late to print the program in time. Troubles and yet more troubles, hope, expectation, doubts of success and then after it's all over and you look back on the three days and you see, in memory, that eager, attentive audience hanging on to the words of the speaker, sometimes a dozen members on their feet at once after he has finished, eager to offer testimony or question the speaker, when you think of the long, long talks among members between sessions and evenings you wonder why you were ever concerned about the *program*. You say to yourself "hang the details, what these people really want is to *get together*." Come right down to it you get more out of the convention outside of the convention hall than you do in it.

Still there must be a program and one that is not lop-sided. As the result of observation the present program maker is convinced that most people want the every-day things rather than the new, a chance to discuss and compare notes on the things done last year which are the things that will be done next year and to that end the following is a very imperfect outline of what will happen at the forthcoming convention at Madison Dec. 11th, 12th and 13th.

Vegetable gardening: best crops to grow for Wisconsin markets.

Overhead irrigation, the Skinner system and other kinds. Representatives of different firms have been invited.

"War Gardens": Soil preparation; fertilizers, seed sowing; early crops; succession crops; tools, etc., one half day will be devoted to this subject.

Flowers for the home: Annuals and their culture; perennials for cut flowers; summer flowering bulbs; planning and planting the home grounds.

Commercial fruit growing: Cherry culture in Wisconsin; orchard cultivation; diseases of tree fruits; the apple grading law; fruit marketing.

There will be twenty-five subjects in all in addition to two evening sessions. One or more representatives of the U. S. Department of Agriculture will be present as well as several delegates from other states, but the bulk of the program will be by our own members.

The complete program will be given in the December number of Wisconsin Horticulture which will be mailed about Dec. 1st.

THE COMING ATONEMENT.

Every American woman is in a position to bring nearer the inevitable atonement for the brutal outrages in Belgium, Armenia and Serbia, the sinking of the Lusitania and other horrors, by her day-by-day economics.

There need be no fear that the sacrifices will be wasted.

Unless the Entente Allies are able to import the supplies necessary for the armies and the population, victory may slip from our united grasp.—Baron Rhondda, Food Controller of Great Britain.

In order to be fair let us insert these two words between the third and fourth words of the first line,—"**and man**"—Editor.

The Hour of Sacrifice.

Our country is involved in a gigantic and terrible war. We are fighting a government that has deliberately and ruthlessly broken every law of nations of man, of humanity and of decency.

We are in the war and in to stay to the very end. When peace is declared it will be an American peace dictated by an American president and conform to American ideals of right and justice. Over a million of our boys are now on their way to France and other millions will follow. Remember we are not suggesting that these boys go they are now on their way.

They are offering their lives; what are *we* doing? The demand of the hour is *sacrifice*. We do nothing worth while unless it costs us something, something of pleasure, something of comfort, of safety. No one of us but can sacrifice something. Each must answer what it is he can do but let no one say there is nothing. Duty calls. Shall we hide within the walls of ease and comfort and selfishness or shall we like our soldier boys when *their* call comes go forward nor heed the cost?

There's a Long, Long Trail.

There's a long, long trail a-winding
Into No-Man's Land in France,
Where the shrapnel shells are bursting,
But we must advance.
There'll be lots of drills and hiking
Until our dreams all come true,
But we're going to show the Kaiser
How the Sammy boys come through.

PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Dec. 11, 12, 13, 1917:

		1st Pre.	2d Pre.	3d Pre.	4th Pre.
1.	Best collection of apples, not less than 15 varieties	$10 00	$6 00	$4 00	$2 00
2.	Best 5 plates (5 varieties) commercial apples for Wisconsin	5 00	3 00	2 00	1 00
3.	Best Plate Ben Davis	1 00	75	50	25
4.	Best Plate Dudley	1 00	75	50	25
5.	Best Plate Fameuse	1 00	75	50	25
6.	Best Plate Gano	1 00	75	50	25
7.	Best Plate Gem	1 00	75	50	25
8.	Best Plate Gideon	1 00	75	50	25
9.	Best Plate Golden Russett	1 00	75	50	25
10.	Best Plate Grimes Golden	1 00	75	50	25
11.	Best Plate Jonathan	1 00	75	50	25
12.	Best Plate King	1 00	75	50	25
13.	Best Plate Maiden Blush	1 00	75	50	25
14.	Best Plate Malinda	1 00	75	50	25
15.	Best Plate McIntosh	1 00	75	50	25
16.	Best Plate McMahan	1 00	75	50	25
17.	Best Plate Newell	1 00	75	50	25
18.	Best Plate Northern Spy	1 00	75	50	25
19.	Best Plate Northwestern Greening	1 00	75	50	25
20.	Best Plate Patten	1 00	75	50	25
21.	Best Plate Pewaukee	1 00	75	50	25
22.	Best Plate Plumb Cider	1 00	75	50	25
23.	Best Plate Salome	1 00	75	50	25
24.	Best Plate Seek-no-further	1 00	75	50	25
25.	Best Plate Scott Winter	1 00	75	50	25
26.	Best Plate Tolman	1 00	75	50	25
27.	Best Plate Twenty Ounce	1 00	75	50	25
28.	Best Plate Utter	1 00	75	50	25
29.	Best Plate Wagener	1 00	75	50	25
30.	Best Plate Wealthy	1 00	75	50	25
31.	Best Plate Windsor	1 00	75	50	25
32.	Best Plate Wolf River	1 00	75	50	25
33.	Best Plate York Imperial	1 00	75	50	25
34.	Best peck of each of the above named varieties	2 00	1 00	75	
35.	Best bushel of each of the following varieties to be shown in trays: McIntosh, Northwestern, Wealthy, Tolman, Wolf River, Fameuse, Garo, Salome, McMahan, Seek-no-further, Windsor	4 00	3 00	2 00	
36.	Best exhibit Pears	1 00	75	50	
37.	Best exhibit Crabs	1 00	75	50	

VEGETABLES.

		1st Pre.	2d Pre.	3d Pre.
1.	Best collection, not less than 10 entries	$5 00	$3 00	$2 00
2.	Best 6 Blood Turnip Beets	1 00	75	50
3.	Best 3 Round Turnips	1 00	75	50
4.	Best 3 Rutabagas	1 00	75	50
5.	Best 6 Chantenay Carrots	1 00	75	50
6.	Best 6 Shorn Horn Carrots	1 00	75	50
7.	Best 6 Salsify	1 00	75	50
8.	Best 3 Winter Cabbage	1 00	75	50
9.	Best 3 Red Cabbage	1 00	75	50
10.	Best 6 Ears Pop Corn	1 00	75	50
11.	Best 6 Red Onions	1 00	75	50
12.	Best 6 Yellow Danvers Onions	1 00	75	50
13.	Best 6 White Onions	1 00	75	50
14.	Best 6 Gibraltar Onions	1 00	75	50
15.	Best 6 Winter Radishes	1 00	75	50
16.	Best 6 Parsnips	1 00	75	50
17.	Best 6 Peppers	1 00	75	50
18.	Best Hubbard Squash	1 00	75	50
19.	Best 6 Heads Celery	1 00	75	50

CRANBERRIES.

Premiums will be awarded for exhibits of Cranberries as follows: Premium list by the Cranberry Growers' Association.

	Variety	1st Pre.	2d Pre.	3d Pre.
1.	Bennett Jumbo	$2 00	$1 00	$0 50
2.	Searls Jumbo	2 00	1 00	50
3.	Bell and Bugle	2 00	1 00	50
4.	McFarlin	2 00	1 00	50
5.	Metallic Bell	2 00	1 00	50
6.	Bell and Cherry	2 00	1 00	50

One pint is sufficient for an entry. Send all entries to Frederic Cranefield, Secretary, Madison, Wis., charges prepaid.

RULES OF ENTRY.

1. Exhibits must be arranged ready for judges by 1:00 P. M., Tuesday, December 11. This will be strictly enforced.

2. Four apples constitute a plate, no more, no less.

3. Separate samples must be furnished for each entry, except for No. 1, which may include all entries.

4. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company

Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary W. S. H. S.*, Madison, Wisconsin.

Buy Insecticides Now.

Prof. H. F. Wilson, chief of the department of Entomology at the College of Agriculture, has recently made a survey of the insecticide situation and reports as follows:

Arsenate of lead, calcium arsenate, and arsenate of zinc are the three insecticide materials which the grower may expect to use next season. Arsenate of lead is the only material which can be used with safety on the fruit trees. Arsenate of zinc is an efficient poison for potato insects but does not appear to be satisfactory for the control of cabbage worms. Calcium arsenate has proven to be a very satisfactory insecticide for both potatoes and cabbage. As this material is now selling at from 10c to 20c a pound less than arsenate of lead and Paris green, it should be the most desirable material to use for garden and field crops next season. The lowest price on wholesale lots of Paris green which I can secure at this time vary from 45c to 50c, indicating that the grower will be paying all the way from 60c to 80c per pound by next spring. Powdered arsenate of lead can be secured as low as 46½c a pound in large quantities. These are retail prices, the wholesale prices being somewhat lower. Calcium arsenate is being retailed at from 15c to 20c a pound in the paste form and from 31½c to 35c in the powdered form, depending upon the quantity. I have not been able to secure definite prices on arsenate of zinc but it is somewhat higher.

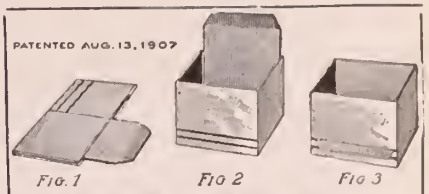
The main point in all of this is that if these prices go up, the dealers, although they may secure these materials at the present price, will run the prices up as high as possible, and the growers are going to have to pay considerably more in the spring than they will if they buy their supplies now.

Horticulture in Alaska.

No doubt printing of notes on horticulture in Alaska seems to many of our readers a waste of good paper and ink. This may be so but the editor for many years has taken a keen interest in the development of horticulture in this far off region. As Alaska's mineral and forestry resources are developed the raising of vegetables and fruits should keep pace with the increase in population incident to their development and even outrun it. The following clipped from a trade paper shows that already the "export trade" in vegetables may be a matter of great interest to Alaskan gardeners.

Seattle, Sept. 28—The Ryan Fruit Company, which firm will handle the Alaska rutabaga and turnip account for the North Coast territory this year, says that first shipments will begin about Octo-

(Continued on page 4)



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We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

McKAY NURSERY COMPANY

MADISON, WISCONSIN

Nursery Stock of Quality

for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

Sweet peas may sometimes be planted in the autumn with good results.

ber 15. An estimate of the crop is not yet available, but it is known that the acreage has been heavily increased during the past year.

Freight charges from shipping points to Seattle at $7 per ton unless shippers are willing to quote at a lower figure f. o. b. than in former years may prevent a ready sale of the rutabagas. Yakima is producing a good quality of rutabaga and Vice President E. A. Wanamaker, of the Ryan firm, says that Alaska growers must expect to meet competition in this territory with the product of Eastern Washington to insure demand. The Alaska rutabaga has been very popular with buyers here during the four years it has been on the market.

The Alaska yellow turnip, in the opinion of Mr. Wanamaker, has no competitor. "It is clean, free of fibre or pith, succulent in flavor and yields to the knife like a Washington Winesap apple," he said, "retaining its flavor uniformly throughout every 100-pound sack. Alaska growers have never been able to supply the Seattle demand."

The following notes are from the annual report of the horticulturist, Prof. Georgeson:

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the bestthat can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices **Baraboo, Wis.**

The Kickapoo Valley **WISCONSIN'S FAVORED FRUIT DISTRICT**

Our Specialty: Planting and Developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

Greenhouse.

The new greenhouse was practically completed and first occupied on March 17, in time to start plants for the season. During the summer a few cucumbers and tomatoes were grown, the tomatoes being especially successful. While the house was erected primarily for plant-breeding purposes, a limited number of greenhouse crops, especially florist's stocks, are being tried. It is too early yet to report results, but there are indications of as successful crops as conditions will permit. Lack of light is the limiting factor for plant growth during the winter months, as the day reaches a minimum length of about six and one-half hours in December, with the sky usually overcast, while the maximum elevation of the sun at the winter solstice is only 9½°. The cinerarias and primulas seem best able to thrive and bloom under these conditions. Nearly all stock tried is looking well, but the growth is slow, although calceolarias, primulas, ferns, cyclamen, geraniums, chrysanthemums, carnations, violets, snapdragons, begonias, and several other plants are making steady progress. The rose seems least able to stand the adverse conditions. Lettuce and parsley do fairly well.

Climatic Conditions.

The latest date at which the temperature fell as low as 32° F. in the early part of the season at this station was on May 20, while the earliest date the same temperature was reached in the summer was on September 7, making a frost-free period of 109 days.

Shrubs.—In addition to the list reported last year the following have proved valuable: Siberian dogwood, golden-leaved elder, *Hydrangea paniculata grandiflora*, Spiræ Anthony Waterer, and *Ribes sanguineum*. The lilac and showing the past season than the showing the paset season than the previous one.

Roses.—Of the roses tried at the station the Md. Georges Bruant, an everblooming white Rugosa, hybrid, has proved exceedingly valuable. Agnes Emily Carmen has not done so well. An unknown red Rugosa hybrid is also very valuable. The buds on the Persian Yellow blasted before opening. Other roses are on trial but have not yet had a chance to prove how they will behave.

Perennials.—About 75 species and varieties of hardy perennials are now growing on the grounds at the station. Quite a number of these were started from seed

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Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

the past year, hence their adaptability is not yet known. The following have proved from fairly to very satisfactory: *Achillea millefolium*, columbines, Carpathian harebell, Canterbury bells, crocus, cowslip, daffodil, English daisy, Shasta daisy, foxglove, forget-me-not, day lilies, Siberian iris, *Lychnis*, Iceland poppy, Oriental poppy, perennial phlox, English primrose, and sweet william.

Peonies produce a few good flowers, but the plants do not increase in size as they should. Among the perennials treated as annuals, the pansy stands the winter here unprotected.

Annuals.—About 60 varieties of annuals were grown, and the following proved highly satisfactory: Snapdragons (Antirrhinum), asters, calendulas, candytuft (Iberis), cornflower, chrysanthemums (mixed), coreopsis (mixed), Extra Early Large-Flowering cosmos, Chinese pinks (Dianthus), African Golden Orange daisy, California poppy (Eschscholtzia), feverfew, Gaillardia, African marigold, French marigold, mignonette, monkey flower, nasturtiums (tall and dwarf varieties), pansy, petunia (single mixed), *Phlox drummondii*, Burbank poppy, Shirley poppy, *Rudbeckia*, stocks, and sweet peas (tall and dwarf).

Marguerite carnations made a fine growth, but were just beginning to bloom when cold weather came. Those lifted and taken into the house have done finely. Centaureas, other than *C. cyanus*, and the morning-glory were failures, while Gypsophila elegans, marvel-of-Peru or four-o'clock, verbenas, and zinnias did moderately well.

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Hardy Plant and Pansy Farm **Baraboo, Wis.**

Have you a good supply of nuts for the winter? Take a day off and gather butternuts, walnuts, or hickory nuts for the winter.

Give the garden a final cleaning. Burn all rubbish. Leave the land clear.

Parsnips and salsify may be left in the ground over winter. As a rule, it is perhaps safer to dig and store them in a cool place in sand or soil. They are more easily got at for winter use when stored than when left in the field.

The value of spraying the orchard at the right time and in the right way again this season has been shown. Much wormy and scabby fruit is on the market from local growers. This moves slowly, while the clean well-graded fruit moves rapidly and at good prices.

Storing Vegetables.

By storing, it is comparatively easy to keep such vegetables as beets, carrots, cabbage, celery, dry beans, dry lima beans, onions, parsnips, potatoes, sweet potatoes. With the exception of beans and turnips, these crops may be stored in the cellar, in pits or banks, or in caves and outdoor cellars.

Pits or banks should be made in a well-drained location. A shallow excavation some 8 or 10 inches deep and of suitable size should be made. This is lined with straw or leaves and the vegetables placed in a conical pile on this material. The vegetables are then covered with straw and then earth, the depth depending upon the severity of the winter. The pits may be covered with additional straw, corn stover or manure during very severe weather. The outdoor cellar or cave is even more satisfactory but the entailed expense is greater.

Beans may be kept in any dry place such as the attic or pantry. Now is the time of the year to care for these crops so that they may be made available during the winter and early spring.—*U. S. Food Administration.*

These suggestions regarding out-door pits may be valuable for milder climates than ours, but for Wisconsin conditions the out door pit or bank is a snare and a delusion. Unless covered with at least 18 inches of straw and earth in alternate layers the "interned" vegetables will freeze solid and if so covered will be inaccessible until spring. Better depend on a cellar.—Editor.

Prepare the land now for shrubbery or flower beds next spring.

Clumps and areas of sumac with their varigated colorings were one of the delights of riding through the country the last of September and early October. Sumac is easily transplanted and makes a fine plant to hold a bank that is too steep or sandy to seed. They should be mowed close to the ground each spring if the best appearance is to be maintained.

It is not too late to plant bulbs either for forcing or outside. Try a few and you will want more next year.

Wealthy and other late fall apples, picked carefully and wrapped in paper and put in a cool cellar, will keep much longer than if handled roughly in boxes or baskets.

Do not pile squash, cabbage or onions in large piles or bins in storage. They should have a good circulation of air about them.

Has the grass been removed from about the apple and other small trees? Rubbish about the tree makes a good harbor for mice over winter. Better put some sort of protector on the small tree to prevent sun-scald and rabbit injury.

Wartime gardens have been a success this year in very many cases. Some have grown to weeds and have been a liability rather than an asset, but nothing has turned people's attention to the value of garden produce like the conditions this year. Let's plan for more and getter gardens next year.

"We have a Fine Lot of Plants for the Garden"

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180 acres good sand loam adapted for potatoes, corn, clover and rye, beautiful trout stream flowing through pasture land; about 20 acres timber.

Orchard and Home — 500 apple trees in their prime. Buildings worth $3000 excellent location

This property is a money making bargain to someone who likes to handle apples.

Price $45.00 per acre.

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Quality Stock

Strawberries

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We must feed the world, let's get together and plan how to do it.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII Madison, Wisconsin, December, 1917. Number 4

HORSE CHESTNUT, AESCULUS HIPPOCASTANUM, A NATIVE OF CENTRAL ASIA BUT QUITE HARDY IN WISCONSIN.

Winter Protection for Fruit Trees, Berries and Roses.

We make no apology for giving below, word for word, directions for winter protection published in the October, 1916, issue of Wisconsin Horticulture. If the advice was good then it is good now. From present appearances there will be plenty of opportunity to cover berry bushes and roses early in December.

THE ORCHARD

Don't prune. Leave that job until March or April. Pruning leaves wounds and these not only will not heal until growth begins, but the wood will check and the bark and underlying tissues die and thus prevent proper healing next spring.

Protect young trees from attacks of rabbits and mice. Wrap the trunks with tarred paper or use veneer strips fastened with string or wire. If paper or veneer is used it should be removed next spring. Tarred paper will surely injure the trunks if left on during the summer and veneer harbors insects.

For protection against mice mound earth around the trees to form a cone of six or eight inches. This is usually sufficient to turn mice. Tramping the snow around the trunks is sometimes effectual. Mice rarely trouble trees in cultivated orchards. Grass or weeds left around trees in the fall invariably attract mice.

BERRIES

Except in the extreme southern part of the state raspberries and blackberries should be given winter protection in order to insure a full crop. Some market growers never cover berry plants and claim they get a satisfactory crop every year. Their claims are not usually well substantiated. Crops from unprotected fields are often light and not infrequently the canes killed to the ground. It pays to give winter protection. To the novice it seems an impossibility to bend down and cover with earth a row of six-foot canes and yet it can be done. Use only heavy forks, no spades, or shovels, Take out a little earth from one side of the clump, shove a fork down close to the canes on the other side and push and pull until the clump lies flat. It can be done. A few roots may crack but there will be plenty left. Anchor the tips with earth and proceed to the next clump. Later cover with 2 to 4 inches of earth. Some growers merely fasten the tips and depend on snow for covering. Sometimes we have plenty of snow.

GRAPES

Prune heavily and cover the same as raspberries.

CURRANTS AND GOOSEBERRIES

Require no winter protection.

ROSES

The rugosas, the yellow garden roses, Persian and Austrian yellow, Scotch white and a few other hardy garden kinds require no winter protection, but the hybrids known variously as hybrid perpetuals, hybrid teas, etc., and including such varieties as "Jack," Paul Neyron, La France, etc., must be covered; also the climbers, Dorothy Perkins and Crimson Rambler. By careful work, bending at the roots at the same time pulling down on the tops even large bushes may be laid flat without breaking. Peg down the tops and leave until the ground has frozen, when mice will have picked out winter quarters elsewhere; then cover with straw or leaves. Carpets or sacks laid over the bushes furnish ample protection if fastened securely. It is sunshine that winter-kills roses, not frost.

Roses may also be protected without bending them down by tying the bushes top and bottom and wrapping with carpet or sacks. In this case fasten the covering securely at the bottom. The loss of a few inches of the tips merely saves that much spring pruning but if the wrapping works away from the bottom we may have to prune close to the ground next spring.

Herbaceous plants that are really hardy will come thru all right without any winter cover and no amount of cover will save half hardy or tender kinds. A light covering over the roots of hardy kinds will do no harm but should be removed very early in spring.

So much at least we should do in October or November. It seems like a lot of work, but it can all be done if the spirit to do it is present. It pays, pays in dollars and cents and in the feeling that we have done our share. We owe it to the trees and plants.

Apple Tree Bulletin

(1) Rabbits and mice are both very fond of the bark of apple trees and very often "girdle" them.

Protect the trunks of your trees all the way from the ground to the first branches. Use strips of wire (mosquito) screen folded around the trunks and fastened with wire.

(2) Tarred paper or even heavy building paper may protect from rabbits but not from mice.

If either is used it must be removed next spring.

(3) A cone of earth around the base of tree (6 inches high) will usually turn mice.

(4) A shot-gun is also a good tree protector. The Game Laws permit you to kill rabbits, *on your own land,* at any time of the year even if you have no license. Be careful to observe the *underlined words.*

Winter Protection for Strawberries

(1) Sometime before winter sets in, the strawberry bed must be covered, not to protect the plants from frost but to protect them from heat.

(2) We want the plants to freeze in the autumn and most of all we want them to remain frozen until spring. Alternate freezing and thawing will seriously injure the plants.

(3) After the ground is frozen and before heavy snow, cover the plants with any material that will keep out sunshine. A light covering is sufficient. The ideal material is marsh hay. Clean straw or cornstalks may be used. Branches of evergreen trees, hemlock, spruce, cedar, etc., furnish excellent material. Leaves are not desirable as these form a covering which is too compact. If stable manure is used it should be light and "strawy." Any material which contains weed or grass seeds is undesirable.

Fresh Rhubarb in Winter

Canned rhubarb is good, fresh rhubarb is better. By digging a few roots from the garden before the ground freezes we may easily have the fresh kind nearly all winter. In the October, 1916, number of Wisconsin Horticulture, Pres. Rasmussen outlined the plan of procedure as follows:

Select three-year old plants, or as much older as you may have, dig late in the fall just before it freezes. Sink your spade full length of blade, cutting a circle close to the hill, then by carefully prying you can lift the hill in a solid clump without loosening the dirt or breaking the roots to any extent. Place these roots on the north side of a building or bush (out of the sun) and let them freeze for about four weeks, this is very essential for if they are not thoroughly frozen the crop will be a failure. Now take an old barrel of any kind put in about four inches of saw-dust or garden soil, even coal ashes will do, but saw-dust is light and clean and holds moisture well. Next place the frozen clump in and pack saw-dust or other material around roots and cover to the depth of about three inches. If you leave the crown exposed you will get too many small stalks. See that the filling is two or three inches higher around the outside of the barrel than in the center, thus preventing the water from running down the outside of the barrel onto the floor. Place in the cellar, water well and cover with carpet, burlap or anything convenient that will entirely exclude the light. Light would develop leaf at the expense of the stalk thereby lessening the crop; light would also rob the stalk of its rich red color, delicate flavor and tenderness.

Now all you have to do is to keep it watered and watch it grow. The temperature of your cellars may vary from 35 to 70 degrees Fahrenheit. The higher the temperature the faster it will grow, but any cellar will grow rhubarb. A hill of rhubarb handled in this way will produce more pounds of edible plant than if left in the ground as its food has all been stored in the root for the coming season and is all transformed into stalk insted of leaf.

Asparagus may be grown in the same way except that it must be kept warmer and must be given some light and it will be found more delicate to handle. Green onions may be grown from sets in flat boxes and may be given plenty of light. If one has plenty of room and a little time beet greens might also be added to the list, planting the old beets same as onions.

A Most Wonderful Mixture

It's an unfortunate fact that the less a nursery agent knows, the more stock he can sell. The ignorance of many traveling representatives of nursery firms is profound. Witness the following: A member who lives in Milwaukee inquired of the agent of a well known Wisconsin nursery firm as to a disease affecting his raspberry plants and was told that it with anthracnose and was advised to spray with the following mixture:

¼ lb. paris green.
3 lbs. blue vitrol.
4 lbs. *air slaked* lime.
½ lb. wood ashes.
30 gallons water.

Make one day before using: two applications this fall, four days apart!

No doubt the paris green is designed to kill the "bugs" that cause the disease. The ½ pound of wood ashes in 30 gallons of mixture is undoubtedly meant to serve as a fertilizer next spring, but why, oh why, the *slaked* lime? May we suggest the addition of a pinch of Bull Durham and a little saleratus?

The Gardener's Advisory Council

In order to utilize to the best advantage the great store of garden knowledge in our Society the Gardener's Advisory Council was formed and one hundred aides appointed.

The members selected were asked to spend four hours a week during the growing season in giving aid and comfort to back lot gardeners. Reports were received from a few members of the Council during the season showing that they took the plan seriously and were at work.

On Nov. 1st a call was sent to all members of the Council to report and the response was most gratifying. It's a mighty fine thing to be able to help someone and the members who spent a few hours this summer helping their less fortunate neighbors doing this missionary work among the heathen, must and do feel well repaid. The Council members were asked in particular to state how many of the real beginners met with success, how many fell by the wayside when the hot weather came and the weeds grew fast, and what proportion of the beginners are planning to have gardens next year. Here are extracts from a few of the reports:

Perhaps the most strenuous case of an amateur back yard garden to come under my notice was that of a city tailor who came to know about his back yard behind his store. On investigation it proved to be a common red, clay bottom covered with two to four inches of coal ashes and had been used for years as a burning and delivery ground for teams. It was so hard that one had to use a pick to break it up. He got a man at it and hauled in some old manure and soft soil to mix with the clay, built a fence around it, and had quite a nice little garden about 16 x 30 ft. There was a row of red geraniums along one side, and several varieties of vegetables on the other part. This little spot was changed from the usual "back of the store" yard to quite a pleasant little garden.

So far as I know the only man who has expressed the idea of giving up is an architect in town who planted a patch of cabbage out in the country and got it very nicely started; then on his next visit his beds were all cleaned off. Much astonished and quite indignant, he went to his farmer to know what had happened to his cabbage patch. The answer came in one word—"woodchucks." So the architect thinks he will stick to his trade hereafter.

I think the "council" is a good stunt and ought to be continued. Think I have been able to give real help in a number of cases.—Irving C. Smith, Ashland, Wis.

Many vacant lots had been offered for gardens, and most of these were cultivated by women and children, and good results obtained.

I think the best work I did was to take extracts from the articles by Professor Moore and others, which appeared in Wisconsin Horticulture, and have them printed in our local papers. I know that many of our amatuer gardeners profited by them; also I know that in many families the household expenses have been reduced by this garden movement, and am quite sure that the garden spirit will continue, and will probably crystallize into a garden club, which will work together with the schools, giving opportunity for interchange of thought, and furthering a community spirit in the work.

I did not see the man, whom rumor located in our town, who bought a peck of seed potatoes and after depositing them all in one hole in the ground hilled them up and expected to raise 50 bushels or so. Think our club will educate him. Also the one who advised our people to save seeds from the best vegetables and serve the vegetables on the table after the seedshave been cut off.—H. J. F. Burlington.

I was not able to do as much in this capacity as I wanted to do for the reason that I have transferred my business to Milwaukee, but still have my home at Lake Mills. At Lake Mills gardening was quite successful this season, all those who planted and properly cared for their gardens were able to harvest good crops. One small patch of ground about 1 x 1½ rods produced four bushels of potatoes and this party will make an effort to do better by cultivating every available foot of ground on his lot next season.

Being in Milwaukee except Saturday and Sunday I attended to some advisory work here and succeeded in inducing a few of my neighbors to plant a back yard garden also several plots of potatoes. The vegetable gardens did very well and will be continued and extended next season but weather was bad for early potatoes in Milwaukee and the crops were not satisfactory. However all but one who tried will try again and I will advise them what to plant as seed and feel they will meet with more success.—Conrad Engsberg, Lake Mills.

In reference to your inquiry regarding the working of the Gardener's Council Advisory in that portion of this city with which I come in frequent contact, can say that I consider my efforts in that line have brought some success.

For one thing, I raised a quantity of cabbage plants from seeds of different varieties and distributed them around, and I consider that line of action brought more success than anything else, so I propose to raise more next year for that same purpose. A boy will come along some damp evening and get a few plants, and when shown how to tend them usually gets results. Plants appeal to him more than so much seed to sow. To anyone conversant with gardening it seems but little trouble to raise cabbage plants and the boys certainly appreciate them.

The School Board has also taken up the matter and appointed a teacher to each school, and are starting night schools for beginners to instruct them in the rudiments of raising vegetables, so the movement is getting well under way in this locality.

Regretting my inability to offer suggestions of any value, I am—E. Hawarden, Superior.

Replying to yours, as a member of the Gardener's Council, we about Wyocena, have been doing some very good work along the line of back yard

farming this season in spite of a severe hailstorm June 22 and 23. We can cite several cases of young people and others who have done some real good gardening and who are much encouraged as beginners.

So far as I know, all are planning to stay in the game for next year. Many, to adapt scripture, have a zeal of gardening but not according to knowledge. An office man planted potatoes for the first time in his life this year. In August he reported that he was disgusted with growing potatoes and should not try it again—they had not even blossomed but were turning yellow and seemed to be dying. Upon being advised to carefully dig up one of the plants to see what was the matter, he was overjoyed to find a good crop of spuds.—J. T. Fitchett, Janesville.

Dear Sir:

In response to your inquiry, please look the following over.

Beginners in gardening are made like beginners in farming. In both cases "there is land galore as the boy says, but there is nothing doing." They work while the spring fever lasts and when the weeds begin to interfere, their work is done. There is only a small per cent of the good intentions that are not carried out to completion, and those are such that like to start the race to coax others along and not patriotic enough to finish.

An amusing incident occurred to one of the old members of the Garden Club who had potted hyacinths. After all her patience had exhausted, she complained to one of her maids that the bulbs were failures. After investigating it was discovered that the bulbs were standing upon their heads. Think of it. Member of a Garden Club. Will you please pour me some more tea?

As a whole we have done wonderfully well. One young man did not recognize the sprouted seeds of many things he had sown, but his persistence in the work made him succeed. Inexperienced beginners should not spend too much time on novelties of the garden, like Brussels sprouts, celery, lima beans, egg plants, peppers. Celery will do if we persist and know how. Navy beans were not what they should be on account of late and early frosts. Beans crowded for space on rich soil were a complete failure. We had new troubles with onions and cucumbers. The former rotted when the bulbs were good size. The onion maggots usually attack in the early season. The cucumbers in many gardens died completely. The attack was near the root system or base of the vine. Could not find stem borers which I suspected. On light soils this did not happen.

"We'll make our fish story a potato story . Because of the shortage of seeds and wanting something for nothing, a young Mrs. handed her husband a pan of potato peelings which he should plant. It will not do to tell of his indignation and look he gave his wife, so she planted a short row in his absence, but requested him not to interfere with her garden, and she got results. This was land never cropped before. A few hills produced tremendously. Twenty-eight potatoes in one hill. Yes. But how large were they? That I'll not say, but will say that it was an *even market basket full.* Three tubers were too small for any use, but not too small to plant next spring.

Our local weather conditions were so good, i. e., in rainfall that fully ninety-five per cent of the beginners will try again.

One discouraging feature of this gardening is the excessive rent exacted by holders of idle lands. Acres and acres lay idle, but the moment anything becomes productive a tax is charged. In some cases more than the parcel of land can produce and the beginners not knowing its productivity, pays the rent and fails to get profitable returns, hence discouraged.—A. H. Lemke, D.D.S., Wausau, member of Gardener's Council Advisory.

(The owners of vacant lots in Wausau must be a fine patriotic, generous, charitable bunch! This is the first and only instance known where a cent has been charged for the use of vacant lots which were used for gardens.—*Editor.*)

Regarding the Gardener's Advisory Council I have had some experiences which I think must have been with real amateurs. Two different people have phoned to know "what is the matter with my cabbage, its all cracking open?" Quite a large number have called up about tomatoes. One woman wanted to known if she should pick the blossoms off. One complained that they were getting no tomatoes, and on going to see, I found a very fine kitchen garden of about four or five square rods of land. Everything in it was good and well cultivated; some things were very fine. The one stumbling block was the tomatoes. I or some one else had told them to prune off all the side branches and train to one or two stocks to the plant. They were cutting off everything and leaving bare arms, the trouble being that they did not know the difference between a large compound leaf and a branch. This seems to be a common error. Several people have called to know if they would have any potatoes because there were no blossoms, or because the blossoms all fell off. Of course I told them the crop of potatoes was not dependent on blossoms, while the woman with her tomatoes was told to leave the blossoms on.

We all of us intend to "come back" next year with renewed zeal, and excel all previous records. Yours for good gardens next year.—Scott S. Dey, Wyocena.

As Gardener's Counsel around Platteville, I had many back lot gardens to look after, and by keeping at owners to till the soil more and in some cases using water during dry times, the results were fair although many were well satisfied. Many small lots furnished the family with winter vegetables, as returns for their labor, and hope during 1918 to increase the work, making special effort to have more spraying done at proper times. I am making special effort to secure better seed for 1918.—N. E. France, Platteville.

In reply to your letter of inquiry regarding "Beginners' Gardening," will say that much was done both in the country and city to induce beginners and particularly school children to do something. For the past several years I have had, as county superintendent, the country pupils make gardens or at least take an active part in their parents' gardens. Every fall practically every country school had an agricultural exhibit in their school

(Continued on page 55)

Amateur Flowers at State Fair

Mrs. C. M. Strong, West Allis.

When Wisconsin Horticulture comes I usually read it through with pleasure and profit. Seldom do I disagree with the *Editor*. But when looking over the report of Horticulture at the 1917 State Fair I read that "The amateur flower exhibit was just a little bit better than ever before shown."

Mr. Editor, I rise to protest vigorously, vociferously and violently. Every amateur exhibitor will tell you singly and collectively, that the exhibit at the 1917 Fair was the poorest in years. But,—there is a reason why it looked better to most people. First, because there was such a small exhibit there was not the need of crowding as usual and second, our perfectly good superintendent added a shelf which helped to relieve the usual crowded condition. Why, actually one could tell there were flowers on exhibition instead of a conglomerate mass of something, no one knew exactly what.

You can imagine my thoughts one day, when standing near the exhibit I heard one woman say to another, "Why, Celosia and Centuria are two different flowers. I always supposed they were the same thing." Just imagine flowers being jammed together so folks think they all grow on one plant. We are very glad, however, that someone else besides ourselves are beginning to think we need more room. We have though so for a long time. Have said it very softly for several years and were really beginning to think we should have to do as the spoiled child does, "Shut our eyes and *howl*" until we were given *more space*, just so we would be still.

You ask for my idea of what an Amateur flower exhibit should be.

The building up of a spirit of generous competition, each exhibitor working not for premiums alone, but the broader and better wish, to have an exhibit that is worthy the name "Exhibit."

There is no reason why the Amateur Exhibit should not be a most beautiful display of the choicest treasures of the flower lover both garden and window flowers. It needs only a little help from those who are interested in the exhibits and co-operation on the part of the State Fair Board and the W. S. H. S.—of this we who are doing our best to be real exhibitors are sure of.

We are trying to make the exhibit more beautful by inducing other flower lovers to exhibit and we are sure we are going to get all the help we ask for. The space we have is small but perhaps ways may be found to increase it.

Now just a few things I have heard in twelve years of listening to comments on the exhibits. "My aren't those plants lovely, *But say*, if I could just bring my Fern or Fuchsia or Begonia, (it just depended on what particular pet plant they had) why it is just beautiful. But they don't give anything for single plants, only Palms. Why don't they?—why?

Then every year the same questions. "I wish I knew how many vases is meant by a display." "I have such beautiful Asters, or Snapdragon, or Dianthus, if they would only tell how many vases you must have to compete." "Do you suppose all those Asters were brought by one person?" "I could not bring that many because you see we only have a lot and we want to grow some vegetables too. But my flowers are so nice I would like to exhibit." Why should not those people have a chance?

Why could there not be a definite number of vases for some of the flowers. We need those people, they are the real flower loving exhibitors.

There should be an increase in the premiums of some of the exhibits. Annuals and Hardy perennials while others could be lowered as they are easy to grow and exhibit. Also some should be taken off the list as there has not been a real exhibit in them for years. Lillies, for example, and Sweet Peas, Nasturtiums, Decorative grasses, Hydrangeas, and as for Roses, the only real Rose exhibitor we have says she wishes something else was put in their place as she has no competition, and it is no fun.

Then, too, *why* can we not have exhibits of Garden Clubs, small clubs who will exhibit on something of the plan of County Exhibits. If the Garden Club idea was discussed at the Winter Meeting and at the Institutes this winter, and also given a boost in WISCONSIN HORTICULTURE, am sure the results would be gratifying at the Fair.

I have been very much pleased with the interest shown in our little Garden Club here at West Allis. People from different parts of the State have asked questions about our club. How we organized, how many members we had and why did we like the small Club? Would not a larger Club do better work? To that question I have always given this answer. The small Club usually *works*, the large Club *argues*. Also a small club is usually composed of members who are congenial, therefore they can do better work.

Heroic Women of France

By Dr. Alonzo Taylor

My words are not powerful enough to do even scanty justice to the most heroic figure in the modern world, and of ages past—the woman of France.

Of the healthy men who are not engaged in the military service in France, practically all are engaged either in transportation of, or in the manufacture of ammitions, leaving the agriculture absolutely to the women. Not only this, but they have stepped into the place of work animals; you can go into any section of France today and se women of magnificent, noble womanhood hitched to the plow and cultivating the soil. All of the agriculture rests upon their shoulders. The home, always an extremely efficient one, maintains a few old men the wounded and the tubercular. Uncomplaining, with high devotion, with an attitude that amounts almost to religious exaltation, the woman of France bears the burden.

Now, conditions being as they are, does it lie within the heart of the American people to preserve and hold to every convenience of our life at the expense of adding an additional burden to the womanhood of France? This is the exact question that is involved in our substitution of other cereals in place of wheat.

The women of France must be enabled to hold up the morale of the French soldier until next spring. The morale of the house decides the morale of the soldier in the fighting line. We can do this by giving them the greatest possible freedom in their food supply, and of this wheat is the chief factor.

The Gardener's Advisory Council

(Continued from page 53)

In a few cases five or six schools combined these exhibits, or as I have called them, "School Fairs" in a central hall.

In the city about 350 children did some work in gardening. Of course not all saw the work through, but enough was done so that every ward school in the city had an agricultural exhibit. Small prizes were given in each ward school. The best of all exhibits was displayed in one of the windows of a down town store.

As for grown-ups and their gardens, will say that fully twice as much land in our city of Manitowoc was planted to gardens as ever before. About one-third of the additional gardeners had little experience in gardening. Many questions regarding gardens were asked of me. If I could not give the information, I referred them to men of more experience and also to state bulletins on the subject. I had on hand many bulletins which gave immediate help.

The work of school children's gardens will go on next year. How much other beginners in gardening will do next year is hard to say, but am inclined to believe more gardening in general will result from our first concerted action toward more and better gardening.—C. W. Meisnest, Manitowoc.

As this is not a city, but a farming locality, every farm has a so-called garden, but very few are real gardens. A real garden should be planted to enough vegetables to supply the daily table throughout the season, and a surplus of some varieties for canning and of some for winter storage. Most gardens had only a spring planting of some of the common vegetables, whereas successive planting of some varieties is not practiced at all, while some of our most delicious vegetables are unknown to many. In many instances cultivation was insufficient, as in the hot dry season when there were no weeds there was also no cultivation. My advice to those people is to plant more varieties and have successive plantings of some of them and also to do more cultivation to loosen the soil whether there are weeds or none.

Hoping my little work will do some good, and as I assume we will again have to do our duty to the country needs the coming season, I am ready to do my share.—Miss E. M. Goelzer.

The beginners in gardening, of whom there were more than usual, had the usual sorrows that go with the profession but with all the troubles, I am glad to say, there was some very good work done. Of the adult amateurs, probably half will not try it again but the other half will raise practically as much as all did this year.

The greatest difficulty was through lack of appreciation of the benefits of cultivation. One wholesome result is that many will realize more forcibly than ever before the fact that the people who raise their beans and potatoes need to know and do something besides dropping seeds into the ground. —E. H. Niles, Oconomowoc.

If there was any especial effort made to increase the products of the gardens in the village gardens, it was either potatoes or beans. Some of the yields of potatoes would do credit to a general farm crop. There are always a few who think they can buy cheaper than they can produce, and a few gardens would bear out the conclusion, if their owners earned enough any other way to purchase same. The garden excuses the purchase, and the chance to purchase excuses the garden. They are as easily satisfied as "Pat whose pig cost him more than it sold for six months later." He had the use of the pig.—H. H. Harris.

Cyclamens are among the desirable house plants at this time of year. They may be kept over several weeks if kept in a cool room and if some attention is given to their watering. It takes about 18 months to bring the plant to flower from seed. Hence, it is not desirable to raise them in the house from seed.

Be sure that the snow is well tramped about the apple and plum trees. This will discourage mice from nesting near them.

Wisconsin Horticulture

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The Annual Convention

Your attention is invited to the convention program which appears in this number. This three-day program is an expensive affair and has been prepared for your benefit. It rests wholly with you whether or not you get the benefit of it. Our meetings will be in the Capitol building, probably the Senate Chamber, and the fruit display will be staged in the rotunda on the second floor as last year. Exhibitors are reminded that all exhibits must be completely set up, tagged and ready

PROGRAM.

Annual Convention, State Horticultural Society, State Capitol, Madison,

Tuesday, Wednesday, and Thursday, Dec. 11th, 12th, and 13th, 1917.

Capital Hotel Headquarters for Officers and Delegates.

Tuesday Afternoon, 2:00 o'clock.

Opening Address.
Introduction of Delegates from Minnesota, Iowa, Illinois and Northern Illinois Societies.
Amateur Gardening in America_____Jas. Livingstone
Address: What Next? _____Wm. Toole, Sr.
Ten Perennial Plants That Everybody Ought to Grow___J. F. Hauser
Paper _____Axel Johnson
Roses for Everybody _____Cecil Britt
Illustrated Lecture: Planning and Planting the Farmstead for Efficiency and Beauty_____Prof. F. A. Aust

Tuesday Evening.

How Women Can Help Win the War in Horticulture and in the Home.

Address by Mrs. H. H. Morgan, Member of the State Council of Defense and Chairman of the Woman's Committee for Wisconsin of the National Defense Council.
Address by Miss A. L. Marlatt, Dept. of Home Economics and Home Economics Representative of the U. S. Food Administration.
How Women Can Help in the Garden Movement_____
_____Mrs. C. E. Strong, West Allis
Woman's Work and Social Service_____
_____Miss Louise Tillson, Milwaukee
War Garden Work in Oshkosh in 1917 and The Plan for 1918 _____Mrs. J. J. Ihrig

Wednesday Forenoon, 9:00 o'clock.

Business Session from 9:00 to 10:00 o'clock.
President's Address: Report of Secretary, Trial Orchard Comittee, etc.
Election of Officers and Executive Committee.

Marketing Small Fruits _____W. D. Cowherd, Missouri
The Need of a National Law Licensing Commission Merchants _____Samuel Adams, Editor American Fruit Grower
Selling Apples Direct to the Consumer_____A. K Bassett
The Wisconsin Apple Grading Law_____Dr. E. D. Ball

for the judges by one o'clock Tuesday afternoon. No fruit will be judged which is not ready at that time. Metings will be called to order promptly at the time indicated on the program.

Pass the Apples

The following poem by Frank Simpson of Huntington, W. Va., was published in a recent number of the Kickapoo Courier of Gays Mills, J. A. Hays, Editor.

Pass The Apples

When every pool in Eden was a mirror,
That unto Eve her dainty charms proclaimed,
She went undraped without a single fear or
Thought that she had need to be ashamed.

'Twas only when she'd eaten of the apple
And found that evermore she'd have to grapple
With the much-debated problem of the nude.

Thereafter she devoted her attention,
Her time and all her money to her clothes,
And that was the beginning of Convention,
And Modesty, as well, I suppose.

Reaction's come about in fashions recent,
Now girls conceal so little from the men,
It would seem, in the name of all that's decent,
Some one ought to pass the apples round again.

Wednesday Afternoon, 2:00 o'clock.

Back Yard and Vacant Lot Gardens—The A. B. C. of Gardening:
- Soils and Soil Preparation: Manures ----------N. A. Rasmussen
- Best Crops: Early crops, succession crops, vegetables for the cellar: best varieties----------A. Martini
- Seed Sowing: Cultivation, Watering ----------J. W. Roe
- What I Accomplished in a City Garden----------Harry Hotchkiss, Oshkosh
- What Boys and Girls Clubs Are Doing to Help Win the War ----------Prof. T. A. Erickson, Minn.
- The Sprinkling System for the Vegetable Garden ---------- G. C. Rasch
- The Skinner System----------W. B. Coles, Representative

Wednesday Evening.

"Come over to our house for supper this evening." A very informal gathering of members and visiting delegates.

Thursday Forenoon, 9:00 o'clock.

The Culture of Small Fruits----------J. L. Hartwell, Illinois
Fifteen Red Raspberries and the Best Three----------W. J. Moyle
The Cranberry Industry in Wisconsin----------C. M. Secker
Old Standard Varieties of Tree Fruits vs. New Ones----------O. M. McElvain, Illinois
The Fall Bearing Strawberries as a Market Crop------M. S. Kellogg
Overhead Irrigation for Strawberries----------J. R. Williams

Thursday Afternoon, 2:00 o'clock.

Recent Significant Facts in Horticulture----------Prof. J. G. Moore
A South or Eastern Slope Best for Fruit Growing and Why ----------W. J. Moyle
Cherry Growing in Door Co.----------Moulton B. Goff
Control of Cherry Leaf Spot ----------Prof. G. W. Keitt
Winter Injury of Cherry Buds ----------Prof. R. H. Roberts

Markets for Cull Fruit

W. J. Wright, Alfred, N. Y.

Last week I had the pleasure of driving through a large portion of the western New York fruit belt. The peaches had been picked and apple harvest was in full swing. This year the apple crop is small and in many instances is poor in quality, but what impressed me more than anything else was the fact that there is a market for every apple. Buyers are keen for barrel stock, the evaporators are offering as high as forty and fifty cents a bushel for windfalls, while the cider mills and vinegar factories are in the market for such fruit as the evaporators and canners cannot use.

It is this opportunity to dispose of cull fruit to advantage which makes apple growing profitable in western New York. The orchards as a rule are not so well cared for as in some other parts of the country, there is much scale and disease, and though the climate is favorable, a yearly crop is by no means assured. On the other hand not a single apple need be wasted. Many growers told me that they sold their culls and windfalls for enough to pay for the cost of pick-

(Continued on page 59)

Character Sketch of John Howard Hale

To start an industry by delivering your products in a push-cart and to see that industry grow until you deliver in self-owned refrigerator cars was the privilege of America's foremost horticulturist, John Howard Hale.

He was born November 25, 1853, in Glastonbury, Connecticut, and died in his native town October 12, 1917, being the son of John A. and Henrietta (Moseley) Hale. He was known as the "peach king" to all American horticulturists. His holdings in acreage comprised an 1,800 acre peach orchard at Fort Valley, Georgia, and two peach orchards in Connecticut, whose combined acreage is 1,200 acres. One of these orchards is at Glastonbury; the other, at Seymour.

When fourteen years of age he began work on a neighboring farm in New Britain. For this work he received $12.50 a month, worked fourteen hours every day, and seven days every week. During the first eight months of this time he spent only $23.00 the remainder he sent home. He used for personal expenses $7.00 of this money and $16.00 was used to buy fruit trees.

There stood in a fence corner of a field which John Hale plowed the first year at New Britain, a peach tree whose fruit was very luscious. The lad enjoyed these peaches. Then and there occurred to him the thought that on mother's rocky and hilly farm near by peaches like these would grow. From that moment on John Hale was a horticulturist.

He started with a spade, shovel, hoe, push-cart, and a few strawberry plants and increased his holdings until at the time of his death these comprised 3,000 acres of highly cultivated orchard lands in Georgia and Connecticut, with every modern equipment necessary to carry on the work in the most approved manner. Most of the methods used being of his own innovation.

He was the first American orchardist to sort, grade, and pack fruit, and to label, and to guarantee it according to its grade.

John Hale ranks as a creative genius, because of the many varieties of peaches he originated. Even in the department of agriculture at Washington he was considered the best authority on peach culture. When that department had puzzling problems on the growing of peaches it appealed to him for information.

The story of his denuded peach trees of one season, best illustrates his venturesome spirit. One of his Connecticut orchards was infested with "brown rot". He sprayed with Bordeaux mixture to control it, but used too much and all his trees lost their leaves.

He asked the horticulturists at Washington for help and all orchardists in whose knowledge he had faith, but there was none to advise him. He next consulted with his Connecticut helpers and soon a boat load of readily available nitrate of soda and muriate of potash from New York at $90.00 a ton was on that orchard. Providence helped by sending warm rains at just the right time and ultimately leaves were again on the trees and in August and September these trees bore the finest of peaches.

Mr. Hale is most widely known for his knowledge of growing peaches, but he also grew apples successfully and is equally as much a recognized authority on apple culture. However, his apple orchard was of more recent origin. Not many years ago he started it in Connecticut with the view to revive an interest in apple growing in his native state.

He was a writer on horticultural subjects for the *World's Work* and *Country Life In America*. For fifteen years he was associate editor of the *Philadelphia Farm Journal* and during that time was also editor of the agricultural column of the *Hartford Courant*.

He was numerously and variously honored as an intellectual, altho denied even a high school education.

The University of Wisconsin, in 1914, presented him with an honorary testimony recognizing his eminent services in the development of agriculture and in appreciation of his efforts for the improvement of the fruit industry.

In presenting him with this degree of honorary recognition,

H. L. Russell, Dean of the College of Agriculture of the University of Wisconsin, said:

"John Howard Hale is one of the foremost orchardists of America. He has reached this position of prominence through sheer ability. Denied the benefits of even a high school education, he secured his training in the school of practical experience, and with no start in life except his natural ability, he has won distinction not only by the magnitude of his operations, but by the introduction of business methods in the marketing of his product."

He was a member, at the time of his death, of the Public Utility Commission of Connecticut. From 1894 to 1899 he was president of the Connecticut Pomological society. In 1894 he was president of the American Association of Nurserymen and since 1903 was president of the American Pomological society. This last is the highest gift within reach of the American fruit grower. In 1890 the government appointed him to take charge of the first special horticultural census, which work was not finished until 1893. He organized the Glastonbury grange and in 1886 was made master of the Connecticut state grange. He held this office for four years.—K. R.

Markets for Cull Fruit

(Continued from page 57)

ing and packing their barrel stock with some to spare. One general farmer with a fair-sized orchard of old high trees was unable to spray this spring so shook the trees this fall and sold the fruit to the evaporator. It brought him about $30 per acre. Another, who could not secure help, instead of grading and barreling his fruit sold it to a cannery, orchard run, and figures that his net profit is more than it would have been if the fruit had been barreled.

This, it seems to me, is the greatest lesson to be learned from the New York fruit belt and one which might be profitably studied by other fruit-growing sections.

How to Get Candy but Save Sugar

The problem of satisfying one's craving for candy without depleting the supply of sugar needed for the nations allied against Germany has been solved in part at least by the home economics division of the department of agriculture of the University of Minnesota. The solution suggests the use of corn syrup in the making of taffy. The recipe folows:

2 cups yellow Karo
1 teaspoon grated or scraped lemon rind
3 tablespoons lemon juice
1 teaspon vanilla.

Boil Karo to the hard crack stage as for any taffy. Remove from the fire and stir in scraped lemon rind, lemon juice and vanilla. Pour in well-oiled tins, and when cool enough to handle, pull until light and break into pieces.

The annual consumption of sugar in the United States is normally about ninety pounds per capita. In order that the immediate pressing needs of America's allies may be met, it has been suggested that the amount of sugar consumed in each household be reduced one-third. The preceding recipe points out a substitute and is recommended by those who have tried it.

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Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

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Fighting the War at Home

An article in the November 17th number of the Saturday Evening Post by A. Curtis Roth, former vice consul at Planen, Saxony, is well worth reading. Especially is it commended to pacifists and all other pussy footed weaklings who go padding about doing consciously or unconsciously the will of the German spy system described by Mr. Roth.

How soon will we realize that the war is being fought *here* as well as in France! Here in Wisconsin, in Madison, in Milwaukee, in Oshkosh, and in every corner of the land.

Mr. Roth says in part:—

"Scientific spying is a Prussian product. It knows no ethics, owns no friendships and enjoys no code of honor. It delights to operate through degenerates, international highbinders and licentious women. It shirks before no meanness or blackguardism to attain its ends. It is the most unlovely fruit of the appalling latter-day German logic of expediency. Corruption and furtive destruction are the blind arms of the German Army, often more dangerous than the visible army in the field. The Russian armies fell before the stealth of the German spy rather than before the charge of the Pomeranian grenadier.

Mr. Roth is able to give first hand information, as he came frequently in contact with high officials of the German spy system from 1912 to the time he left Germany. His long acquaintance with one of the chiefs of the system afforded him an opportunity to glimpse the inside workings of this highly "kultured" organization. Lest we get the idea that the work is all done by German citizens, listen to this:

"Most of the courier work of the German spy machine is done by neutrals. Some of the most dangerous foreign missions are carried out by traitorous citizens of enemy countries, and my secret-service friend informed me cynically that there was no trouble in finding plenty such of highest capacity, but that the only trouble lay in the choosing. He told me that Russians, Frenchmen and Englishmen of high standing were serving in the German intelligence forces."

"You would be surprised," he said to me one night, "to learn the names of some of your own countrymen acting as agents of our Foreign Office. I have done some very effective work through one of them in your country, a man of keen intellect and undisputed position."

We are good natured, lenient, and gullible. We hear lies about Red Cross work and either remain silent or pass them on. We hear disloyalty or sedition preached and we are too cowardly to resent it, either from the fear that it may hurt our business or because we don't want to quarrel with a neighbor. We hear peace talk and even when we know that there can be no peace we repeat it.

"To the German leaders peace and labor movements in enemy lands mean German victory and domination. More especially is the present peace propaganda spreading abroad in the world a two-edged weapon in the hands of the *Vaterland's* autocrats. It is a weapon more subtle, more insinuating, and far more difficult to combat than is the German Army in the field. He who talks peace to-day finds many sincerely responsive hearts, which, under the spell of their spiritual enthusiasm, can lightly be turned to uses the purpose of which they do not know or stop to analyze. The German agent or spy, talking peace is the sublimation of German cunning, and more dangerous to the liberties of the world than any poison gas yet flooded across the sad and brutalized fields of Northern France!

"The German agents are making a peace drive to-day to make the victories of the German armies good. They are striking at the sources of the enemy power arrayed against them. If this intrigue proves successful Germany will have won the war; it will have then justified its honorless, conscienceless but adroit intelligence machine. The Germans to-day bringing gifts are more dangerous than they are crouched behind their gas tanks and giant mortars!"

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

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Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

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Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Garden land should be plowed late in fall and left rough. This will destroy many insects, allow the water to go deep into the soil and give a chance for sod or green manure to decay.

Dig a few hills of rhubarb and let them freeze outside for a few weeks. Then they may be put in the cellar in soil, sand, or ashes, watered well, and shaded from sunlight, and will give some much appreciated sauce material during the winter.

Farmers' Bulletin No. 879 United States Department of Agriculture, is an interesting discussion of the home storage of vegetables. Send for it.

Draw up the currant and gooseberry branches and tie them together. This will prevent the snow from breaking them down.

Look over the fruits and vegetables in the cellar and see that none are decaying.

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OUR SPECIALTY

The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices

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Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

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GAYS MILLS, WISCONSIN

Not Loved Anywhere

Those misguided German residents of the United States who have carried their devotion to Prussianism to the point where they have laid up a heritage of hate for themselves and their children in this country cannot have even the poor consolation that their efforts have been appreciated in Germany. Former Ambassador James W. Gerard in his recent talk in Milwaukee, declared that such persons were hated in Germany even worse than the Americans.

He said concerning these people, "The hate which the Germans have for the Americans is exceeded by only one hate—and that is the hate for the German-Americans. Here's what one paper published in Germany said: "We only hope that the German-Americans will erase the word "German" from their names, that title being an insult to our people as well as to themselves."

The German rulers expeeted something more than lip-service and obstruction from their allies in this country. They expeeted them on the outbreak of war to take the first ship to Sweden or Switzerland or Holland and from there get back to Germany and enlist. Very few did this. All wished to stay here even while talking for Germany.

When the war broke out between Germany and the United States, Prussian autocrats expeeted their American allies to start riot and revolution in this country. Nothing of the kind followed. The consequenee is that these German-Americans only succeeded in creating an antagonism that will follow them for generations in this country while making themselves despised in the nation from which they came.—

What Do They Want?

The few German-Americans who still sympathize with Prussia will find it hard to answer the question which former Ambassador James W. Gerard asks in his Milwaukee speech.

"What do these people want?" he asks, "is it devotion to the Fatherland that they feel? Do they want to go back to Germany? If life in Germany was so agreeable to them why did they leave it? Do they want to go back to be shoved off the sidewalk by German officers or be struck in the face with a whip?"

These questions must have arisen to every one who has met those few Germans who still hold an allegiance to Prussia. What do they expect to gain by this double allegiance? Do they expect to make it pleasanter for their children in this country, or do they want their children to go back to Germany? Do they think this country would be a better country to live in if Germany won? Do they think it would be pleasanter for Germans in America because of the attitude that these few are now taking? What is it that they expeet to aceomplish by their present position?—*Wisconsin Patriotic Press Association.*

One Hundred Per Cent. Americans

This is not a time for diluted Americanism. The only true American is the one-hundred per cent kind. There are just two kinds of people in these United States at the present time, Patriots and Traitors; no other classification can be made. This is well expressed in the following editorial in the Madison Democrat:

Free!

A 50-gallon barrel of Scalecide free to any any one who will suggest a *fairer* guarantee than that given below.

"SCALECIDE"

As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity:
Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE", and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECIDE".
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"The nation needs patriots,—brave, outspoken, courageous, enthusiastic lovers of their country. It needs patriots who are active, fearless, self-sacrificing, ready at all times, under all circumstances, no matter at what cost, to stand by the government, to support the administration, to fight the war through to decisive and final victory.

Passive patriotism will not do!

Such an expression is a contradiction in terms. Indeed, the so-called patriotism that is passive, inert, indifferent, is akin to disloyalty. It seeks to be on good terms with both sides, to avoid injuring the enemy if even it does not join hands with him.

Genuine patriotism on all occasions flames forth in indignation when in the presence of the country's enemies. It needs no urging. It looks for no reward. It waits for no command. It is ready on the moment when the nation is in danger, when its honor is at stake, when its interests are threatened, to spring to action, and if necessary engage in a death grapple with all enemies. Genuine patriotism is **NEVER UNDER SUSPICION**! Its motives are never questioned. Its purpose is never doubted. Its sincerity is never challenged. There is no skepticism, no misgiving, no mistrust about it.

Genuine patriotism makes everything secondary to love of country, to loyal support of the government, to prompt and complete vindication of the right. The true patriot has nothing in common with the enemies of his country. He considers them **HIS** enemies. He does not seek, nor would he accept their approval or support. In fact, he would feel discredited, if not disgraced were they to tender him their support, or manifest in any way their approval of his conduct.

BETWEEN the **PATRIOT** and the **TRAITOR** there is an impassable gulf!

What the one loves the other hates. What the one commends the other condemns.

What the country, yes what the world, needs today is true patriots who are always unselfish, not cynics, egoists, fault-finders who are always selfish!

In this world crisis when everything is at stake, when the foundations of our civilization are being undermined, when true freedom is assailed—at this moment when the lines are sharply drawn between autocracy and democracy, between civilization and savagery, there are but **TWO CLASSES** of men,—**PATRIOTS AND TRAITORS**, friends of the government and enemies of the government, and of them and each of them, it might be truly said, "By their works ye shall know them!"

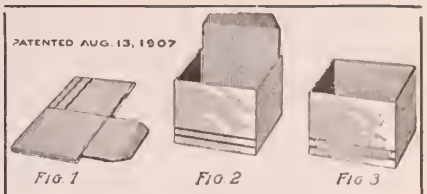
The world today looks to America, and America looks to her loyal children, her patriot sons, for the strength and support necessary to preserve true freedom for mankind. There is but one test of loyalty today—active, earnest, unselfish, enthusiastic support of the government in carrying on the war.

President Wilson, after stating that "The world must be made safe for democracy," said:

"To such a task we can dedicate our lives, our fortunes, everything we are, everything we have with the pride of those who know the day has come when America is privilged to spend her blood and might for the principles that gave her birth."

In this great work we are now engaged and the man who is not heart and soul with us, who does not consider it a privilege to uphold the government, to fight our battles, to keep our people united in purpose, and strong and firm in resolution and determination. is not a patriot **BUT A TRAITOR**!

The United States Department of Agriculture experts have estimated that the war gardens of the United States have added more than $100,000,000 to the country's wealth. They at least have acquainted many with gardening and outdoor life who did not appreciate either before.



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Dept. D, Cumberland, Wis.

Protect trees and shrubs from rabbits now. Some of the wire or wood protectors are good. Burlap, paper, or even corn fodder, may be tied on with good results.

Thoroughly rotted manure scattered over the lawn just before snow comes helps to keep the snow on over winter and also adds much needed fertility to the soil.

Tobacco preparations will keep the aphis or green fly found on house plants in check, but will not have much effect on the white fly. When plants are infested with white fly they may be thoroughly washed by dipping in water. If white flies are numerous, it may be safest to destroy the plant entirely to prevent the insect spreading to other plants.—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minn.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.

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WRITE FOR CIRCULARS AND INFORMATION

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume XIII | Madison, Wisconsin, January 8, 1918 | Number 5

THIS intolerable thing of which the masters of Germany have shown us the ugly face, this menace of combined intrigue and force which we now see so clearly as the German power, a thing without conscience or honor or capacity for covenanted peace, must be crushed, and if it be not utterly brought to an end, at least shut out from the friendly intercourse of the nations. * * * *

"Let there be no misunderstanding. Our present and immediate task is to win the war and nothing shall turn us aside from it until it is accomplished. Every power and resource we possess, whether of men, of money, or of materials, is being devoted and will continue to be devoted to that purpose until it is achieved.

"Those who desire to bring peace about before that purpose is achieved I counsel to carry their advice elsewhere. We will not entertain it."—President Wilson.

Message to Congress Dec. 4, 1917.

THE ANNUAL CONVENTION.

Report by E. R. McIntyre in Wisconsin Farmer of Dec. 20th.

Confronted with the war-time duty of developing to the utmost the commercial fruit and vegetable industries of the state on the one hand, and assuming direct leadership in teaching intensive home gardening as well, the fifty-second annual convention of the Wisconsin State Horticultural Society held at Madison, December 11–13, took on a most serious and deliberate tone. Sessions were held in the state capitol.

At the outset of the convention, the keynote of the situation was expressed by Secretary Frederic Cranefield, who emphasized the fact that it is now the absolute duty of every public or semi-public organization concerned in the production of food to postpone for a time such activities as relate only indirectly to that problem, and put extra force into methods of increasing and conserving the commissary stores.

In this line of work the State Horticultural Society has taken a leading part. It was the first in the field with a publication intended to aid the amateur gardener, namely, the special edition of the society's magazine, Wisconsin Horticulture, which was mailed to members and others interested on April 17th.

This initial drive for better home gardens as national food defense measures was quickly followed by the organization of The Wisconsin Gardener's Advisory Council, a group of volunteer workers who directed local efforts in fruit and vegetable growing.

Secretary Cranefield declared that nothing in his fourteen years of service as an official of the society equals the spirit and results accomplished by this brigade of garden guardians.

Members of the Gardener's Advisory Council went on record at the convention as firm believers in the ultimate good of the movement in which they were engaged, and pledged to continue the work with added reinforcements next spring. Many of the members stated that winter garden conferences have been planned in their districts in order to review the past season's successes and failures and create wider enthusiasm for future work.

They believe that the sum total in production from 100,000 well worked tenth-of-an-acre gardens is of greater economic importance than 10,000 acres devoted to market gardens. Mr. Cranefield said that Wisconsin does not have quite 5,000 acres devoted to commercial vegetable gardening, while it is not an overstatement to place the Wisconsin home garden area cultivated in 1917 at 200,000 gardens of one-twentieth of an acre each, or 10,000 acres.

Wives of the visiting delegates and others interested in county council of defense garden movements lent aid to the program. Mrs. H. H. Morgan, chairman of the women's committee for Wisconsin of the National Defense Council spoke in support of the state-wide garden movement, as did Miss Abby L. Marlatt, head of the home economics department of the University of Wisconsin and home economics representative of the United States Food Administration.

Mrs. Morgan urged closer unity and more thorough local organization of all women to the end that war work may become a vital part of home life and ambitions. Miss Marlatt dwelt in particular upon the conservation of fruits and vegetables, and asked horticulturists to support all present and future plans based upon intelligent and rational methods of kitchen economy. Miss Marlatt placed the services of herself and members of the home economics staff at the university at the disposal of women engaged in all phases of food thrift.

Mrs. C. E. Strong, of West Allis, presented the results of the war garden movement in that city. There during the past summer the loyal populace, aided by public information from the State Horticultural Society and the College of Agriculture, planted and cultivated fully 1,200 gardens, averaging 60 by 120 feet in size. Similar accounts of personal interest and devotion to back-lot farming were outlined by Mrs. J. J. Ihrig, Oshkosh, who gave a brief synopsis of the garden plans mapped out for that city next season.

N. A. Rasmussen, president of the society, aided by A. Martini, Lake Geneva, secretary of the Walworth County Foremen's and Gardeners' Association, then provided some technical information to aid the directors of forthcoming garden campaigns. They explained soil requirements and soil management, and gave hints on early crops, succession crops, and the storage of different varieties of fruits and vegetables. Next spring both Mr. Rasmussen and Mr. Martini, through the society's publication and by means of special lectures, will continue to lend help to the cause in many parts of the state.

Owing to the severe weather many of the numbers scheduled on the program had to be omitted.

The illness of two members of the society also reduced the exhibits somewhat. The display of Wisconsin grown apples and vegetables in the rotunda of the second floor of the capitol was, however, worth coming long distances to see. Hardly without exception, the exhibits of apples were placed by commercial growers, and represented the best products of the Bayfield peninsula, Door peninsula, the Lakeshore district, from Kewaunee county southward to Milwaukee county, and including choice specimens from the famous Kickapoo Valley orchards of Crawford county. Sauk county, with A. K. Bassett, of Baraboo, as its champion, came through the ordeal with a long string of prizes to its credit. Jefferson county was represented no less thoroughly by Fremont Lounsbury, Watertown, who likewise made some "cleanings" in standard varieties.

Nevertheless, there still continues to be a lamentable lack of interest in the annual state apple and fruit show, a fact not easily explained in a casual manner. Some attribute this indifference to a lack of suitable premium awards; some say it is due to the more pressing duties brought about by the national call to arms, while still other members believe the state fair and county and district horticultural shows have weaned away some of the faithful. Judging of exhibits was left to members of the horticultural department of the University of Wisconsin, J. G. Moore in charge.

Some interest was attached to the annual report of the trial orchard committee, William Toole, senior, Baraboo, and M. S. Kellogg, Janesville. In addition to maintaining a trial vineyard at Sparta for the past seven years, the society has eight different test orchards leased and under its personal management. In this work the Wisconsin society leads all other state horticultural association. The orchards are maintained for the sole purpose of determining to a nicety the sections of the state which can be recommended for this branch of food production on a commercial scale.

The vineyard at Sparta will be abandoned. After seven years' trial the society has found that grapes cannot be grown commercially with any assurance of success in that region. The decision need not act as a check on the efforts of home growers, however, the committee stated, but the fact remains, nevertheless, that only one profitable crop of grapes suitable in every way to Wisconsin conditions could be produced during the seven years in which the Sparta plot was in operation. The best of care and attention was given the project from the start.

The Wisconsin apple grading law, which makes compulsory the exact grading and packing of all apples for sale in the state, was discussed, and seemed to meet the hearty approval of the members. It is the first law regulating the fruit industry to be placed on the statute books in Wisconsin, and Dr. E. D. Ball, of the state department of agriculture, has charge of its administration.

The discussions brought out the fact that the law must be respected and upheld if for no other purpose than to open the way for further favorable legislation. To disregard the provisions of the law, which provide that all apples consigned to the regular box and barrel channels of trade must be marked according to four classified and one unclassified descriptions, would be suicide to the progress of Badger horticulture.

The future of Wisconsin horticulture and some things it must stand for was the subject of an address by J. G. Moore, college of agriculture. Mr. Moore's keynote was that Wisconsin commercial fruit growers must aid farmers in adopting better methods of caring for their home orchards. The commercial man has in some cases, Mr. Moore believes, been loath to impart his trade secrets or give useful suggestions to neighboring farm orchardists for fear that these private fruit growers might in time come in line for competition in the open market with a product equal to his own.

He said that the most significant thing in recent horticultural circles in Wisconsin was the awakened interest evinced by the average farm orchard owner in properly caring for his trees. With this in mind, Mr. Moore urged all commercial growers to at least "practice what they preach on their own holdings."

They must spray and prune and cultivate their orchards for the benefit of their farm neighbors as well as themselves. The speaker pointed out that the danger of possible competition from strictly amateur-grown fruit need not worry the commercial grower.

This is true because of two things, he said, namely, that a commercial man really suffers the most damaging sort of competition when lots of inferior, scabby fruit is thrown on the market. The poor stuff sets the price level. Then the premium price above that level which the commercial man gets for his improved article may not be as high relatively, after all, as would be the case in a market where

(Continued on page 78)

The Prize Winners.

Annual Convention, Madison, Dec. 11–13, 1917.

Best collection of apples—First, A. K. Bassett, Baraboo; second, Fremont Lounsbury, Watertown; third, F. B. Sherman, Edgerton.

Best five plates, commercial—First, Kickapoo Development Co., Gays Mills; second, H. H. Harris, Warrens; third, A. K. Bassett; fourth, Carl J. Baer, Baraboo.

Plate Ben Davis—First, Fremont Lounsbury; second, J. A. Hass, Ellison Bay; third, A. K. Bassett.

Delicious—First, D. E. Bingham; second, L. E. Birmingham.

Plate Fameuse—First, A. K. Bassett; second, Carl J. Baer; third, L. B. Irish, Baraboo; fourth, W. A. Toole, Baraboo.

Plate Gano—First, Carl J. Baer.

Plate Gem—First, A. K. Bassett; second, L. B. Irish; third, W. A. Toole.

Plate Gideon—First, Fremont Lounsbury; third, F. B. Sherman.

Plate Golden Russett—First, A. K. Bassett; second, Kickapoo Development Co.; third, Arno Meyer, Cascade; fourth, Carl J. Baer.

Plate Grimes Golden—First, Arno Meyer; second, F. B. Sherman.

Plate Jonathan—First, Fremont Lounsbury; second, A. K. Bassett; third, Rudolph Schultz, Lake Mills; fourth, W. A. Toole.

Plate Maiden Blush—First, N. A. Rasmussen, Oshkosh; second, Fremont Lounsbury.

Plate McIntosh—First, Kickapoo Development Co.; third, A. K. Bassett; fourth, F. B. Sherman.

Plate McMahan—First, Fremont Lounsbury; second, H. H. Harris; third, L. B. Irish; fourth, F. B. Sherman.

Plate Newell—First, Kickapoo Development Co.; second, Carl J. Baer; third, A. K. Bassett; fourth, W. A. Toole.

Plate Northern Spy—Third, Fremont Lounsbury.

Plate Northwestern Greening—First, Kickapoo Development Co.; second, A. K. Bassett; third, Carl J. Baer; fourth, H. H. Harris.

Plate Patten—First, H. H. Harris.

Plate Pewaukee—First, A. K. Bassett; second, N. A. Rasmussen; third, Arno Meyer; fourth, Fremont Lounsbury.

Plate Plumb Cider—First, Fremont Lounsbury; second, A. K. Bassett; third, F. B. Sherman.

Plate Salome—First, H. H. Harris; second, Rudolph Schultz.

Plate Seek-no-Further—First, A. K. Bassett; second, Fremont Lounsbury; third, W. A. Toole.

Plate Scott Winter—First, Carl J. Baer; second, H. H. Harris; third, W. A. Toole; fourth, L. B. Irish.

Plate Tolman—First, Carl J. Baer; second, A. K. Bassett; third, Kickapoo Development Co.; fourth, F. B. Sherman.

Plate Twenty Ounce—First, Fremont Lounsbury.

Plate Utter—First, A. K. Bassett; second, Fremont Lounsbury.

Plate Wagner—First, Fremont Lounsbury.

Plate Wealthy—First, Carl J. Baer; second, H. H. Harris; third, Kickapoo Development Co.; fourth, L. B. Irish.

Plate Windsor—First, F. B. Sherman.

Plate Wolf River—First, Carl J. Baer; second, Kickapoo Development Co.; third, H. H. Harris; fourth, N. A. Rasmussen.

Plate York Imperial—First, A. K. Bassett; second, Fremont Lounsbury.

Peck Ben Davis—First, A. K. Bassett; second, Fremont Lounsbury.

Peck Fameuse—First, Carl J. Baer; second, A. K. Bassett; third, L. B. Irish.

Peck Gano—First, Carl J. Baer.

Peck Gem—First, A. K. Bassett; second, L. B. Irish.

Peck Golden Russett—First, A. K. Bassett; second, Carl J. Baer; third, Arno Meyer.

Peck Jonathan—First, A. K. Bassett.

Peck Maiden Blush—First, Fremont Lounsbury.

Peck McIntosh—First, Kickapoo Development Co.; second, A. K. Bassett.

Peck McMahan—First, Fremont Lounsbury.

Peck Newell—First, Carl J. Baer; second, A. K. Bassett; third, L. B. Irish.

Peck Northern Spy—Second, Fremont Lounsbury.

Peck Northwestern Greening—First, Kickapoo Development Co.; second, A. K. Bassett; third, Carl J. Baer.

Peck Pewaukee—First, A. K. Bassett.

Peck Plumb Cider—First, Fremont Lounsbury; second, A. K. Bassett.

Peck Seek-no-Further—First, A. K. Bassett; second, Fremont Lounsbury.

Peck Scott Winter—First, Carl J. Baer; second, H. H. Harris; third, L. B. Irish.

Peck Tolman—First, Carl J. Baer; second, A. K. Bassett; third, Fremont Lounsbury.

Peck Twenty Ounce—First, Fremont Lounsbury.

Peck Utter—First, A. K. Bassett; second, Fremont Lounsbury.

Peck Wagener—First, Fremont Lounsbury.

Peck Wealthy—First, Kickapoo

Development Co.; second, L. B. Irish; third, Carl J. Baer.

Peck Wolf River—First, Carl J. Baer; second, N. A. Rasmussen.

Peck York Imperial—First, A. K. Bassett.

Bushel McIntosh—First, Kickapoo Development Co.

Bushel Northwestern Greening—First, Carl J. Baer; second, Fremont Lounsbury; third, L. B. Irish.

Bushel Wealthy—First, Carl J. Baer; second, Kickapoo Development Co.; third, A. K. Bassett.

Bushel Tolman—First, Carl J. Baer.

Bushel Fameuse—First, A K. Bassett; second, L. B. Irish; third, Fremont Lounsbury.

Bushel McMahan—First, Fremont Lounsbury.

Bushel Seek-no-Further—First, A. K. Bassett.

Best Exhibit Crabs—First, Fremont Lounsbury; second, A. K Bassett.

Best Seedling Apple—First, Rudolph Schultz.

Cranberries.

Bennett Jumbo—First, Mrs. Pauline Smith, Grand Rapids; second, Arpin Cranberry Co.; third, Mrs. N. S. Whittlesey, Cranmoor.

Searles Jumbo—First, A. Searles & Son, Grand Rapids.

Bell & Bugle—First, Arpin Cranberry Co., Grand Rapids; second, Elmer Dana, Tomah.

McFarlin—First, E. K. Tuttle, Mather.

Metallic Bell—First, Arpin Cranberry Co.

Bell & Cherry—First, Mrs. Pauline Smith.

Prolific—First, Arpin Cranberry Co.; second, Mrs. S. N. Whittlesey.

Vegetables.

Best Collection, not less than 10 entries—First, N. A. Rasmussen; second, John F. Hauser, Bayfield.

Six Blood Turnip Beets—Second, N. A. Rasmussen.

Three Round Turnips—Second, John F. Hauser; third, N. A. Rasmussen.

Three Rutabagas—First, John F. Hauser; second, N. A. Rasmussen.

Six Chantenay Carrots—First, N. A. Rasmussen; second, W. A. Toole; third, John F. Hauser.

Six Short Horn Carrots—First, E. L. Roloff, Madison; second, John F. Hauser; third, H. C. Christensen, Oshkosh.

Six Salsify—First, N. A. Rasmussen.

Three Winter Cabbage—First, Nic Sorenson, Lake Geneva; second, N. A. Rasmussen.

Three Red Cabbage—First, N. A. Rasmussen; second, Nic Sorensen.

Six Ears Pop Corn—First, N. A. Rasmussen; second, Albert Gilley, Stoughton.

Six Red Onions—First, Albert Gilley; second, L. B. Irish; third, N. A. Rasmussen.

Six Yellow Danvers Onions—First, W. A. Toole; second, N. A. Rasmussen.

Six White Onions—First, N. A. Rasmussen; second, L. B. Irish; third, H. C. Christensen.

Six Gibraltar Onions—First, A. Martini, Lake Geneva; second, N. A. Rasmussen.

Six Winter Radishes—First, John F. Hauser; second, N. A. Rasmussen.

Six Parsnips—First, E. L. Roloff; second, Albert Gilley.

Hubbard Squash—First, Mrs. Henry Miller, Middleton.

Report of Secretary F. Cranefield.

(Presented at Annual Convention)

When we met in December 1916, one short year ago, we met with cheer and good will, with congratulations in our hearts and on our lips for then the spirit of our meeting, altho tinged with sorrow for the suffering peoples of all the warring nations, was but as a repetition of conventions which had preceded it.

We talked of apple scab, blight, roses, trial orchards, the best ways to kill bugs and Prof. Moore lectured us on our shortcomings. We discussed our profits and our losses, our hopes and our disappointments, how best to make more money and how we might better serve all the people of the commonwealth in our chosen life work.

Today we meet under different circumstances for our nation has been inevitably drawn into the war, the greatest and most terrible conflict of all ages.

This means that every citizen of the United States must assume his part in that conflict, every one, in some capacity must serve his country.

It means also that every public or semi-public organization, particularly those concerned in the production of food, must postpone for a time such activities as relate only indirectly to that problem and direct all of their energies to increasing the food supply.

To our Society this call comes with a force and an appeal that cannot be resisted even if we would, for are not we the guardians of the gardens? To us in the past has been entrusted the task of creating in the minds and the hearts of the people a desire for better fruits, better gardens and better homes. So accustomed are

we to dealing with big problems, so used to speaking in terms of car loads and of acres, so absorbed in developing the commercial fruit and vegetable industries of the state that sometimes we, or at least some of us, have overlooked the fact that the sum total of production of 100,000 gardens of 1/10 of an acre each is of greater economic importance than 10,000 acres devoted to market gardens. It is doubtful if we have in Wisconsin 10,000 acres devoted to commercial vegetable gardening and it is not too much to say that in the whole state 200,000 gradens of an average of 1/20 of an acre each were cultivated last season amounting to 10,000 acres. This is a very conservative estimate and there are some who have set the figure three times as high.

There is little need, then, for us at this time to canvass the broad field of horticulture for that which is best for us to do; the task is at hand.

This does not mean that we should neglect or even slight those things which have absorbed our attentions in the past, better fruit and more of it, the marketing of our produce, brightening the home by raising flowers; it only means that we must do more than we have ever done before, that we who are best equipped for the task must serve as leaders.

It is gratifying to me, your secretary, to be able to stand here today and say to you and through you to all the people of the state that the State Horticultural Society has taken a leading part in this work since April, 6th.

We were the first in the field with a publication intended to aid the amateur, viz., the special edition of our magazine mailed April, 17th, just two weeks earlier than any other similar publication.

The succeeding issues of our paper for several months were devoted almost wholly to the home garden and given as wide a circulation as possible.

Several meetings were arranged in communities where the need for help seemed greatest, each attended by one or more of our officers.

Predictions were not lacking by the Gloom Squad that interest would lag as the season advanced and in order to overcome this the Gardener's Advisory Council was organized. An account of the splendid work done by this group of volunteers appeared in the December number of WISCONSIN HORTICULTURE. Without belittling in any measure work done by members of our association in the past I find nothing in my fourteen years of service quite comparable in spirit and results accomplished equal to the work of this voluntary body, the Gardener's Advisory Council.

In these ways then the State Horticultural Society has aimed to serve as soldiers in the Great War.

We have not neglected to do the things which we set out to do before this other and greater opportunity to serve came to us.

In the field of legislation we have not been idle. Through the efforts of this Society the first important step has been taken toward the solution of the vexed problem of marketing by the enactment of the Apple Grading Law.

Through our efforts also the game laws have been so amended as to give reasonable protection to owners of apple trees from the attacks of that dear little furry quadraped, the cottontail.

Our relations with the College of Agriculture continue on the same cordial basis as in the past and on this account our members are coming to realize more fully than ever not only the need but the great value of every department of this splendid institution and I am sure every member will join with me in expressing to the departments of horticulture, entomology and plant pathology our grateful appreciation of the excellent work done by these departments in the advancement of horticulture in Wisconsin. We are immensely grateful that we have as leaders in the work of instruction and investigation in horticulture and therefore co-workers, men like Jones, Moore, Wilson, Keitt, Vaughn, Roberts, Milward, Potter and Aust. There is, there cannot be anything but the heartiest coöperation between these two departments.

In like manner our relations with the State department of agriculture draw closer each year until now that department has entrusted to our Society the conduct and management of the horticultural department at the State Fair.

The Trial Orchards have been conducted as in past years. The Trial Orchard Committee will report on the conduct and management of these.

The orchard census work begun so auspiciously in 1916 was suspended in 1917 owing to lack of funds. Your secretary has unlimited faith in this work and hopes that means and the man may be available the coming year to continue it. A complete orchard census of the commercial orchards of Wisconsin will serve as a foundation from which to build a system of crop reports which will be reliable and valuable not only to the grower but to the dealer and the consumer.

A Jew, David Lubin, who a few years ago was a farmer in California and probably unknown out-

side of his own community has become a figure of international importance through his successful efforts in finally establishing an international system of crop reports, especially of breadstuffs. The whole world now looks to the International Agricultural Institute of Rome for reliable information on the wheat crop.

Through the efforts of our executive committee we have for several years been able to have one or more special lecturers on horticultural subjects on the farm institute force.

Last year Supt. Luther complied with our request to hold 22 special fruit institutes during the season 1916–1917. These institutes conducted by Messrs. Bingham and Rasmussen were well attended and highly successful.

During the past two years we have been able to take part in horticultural affairs of more than state-wide importance. Our representatives have taken a leading part in the organization of the National Apple Growers Association and the National Congress of Horticulture; the first named an organization which has for its object the collection of reliable data on the apple crop throughout the whole country. This is work which is done very carefully and thoroughly each year by the National Apple Shippers Association which is an organization of buyers and if the growers can secure similar reliable data they should be in a position to make very good terms with the buyers.

The National Congress of Horticulture is much broader in scope than any other horticultural organization in the country.

The following preamble adopted at the recent meeting held in Boston states clearly the objects and aims of the Congress:

WHEREAS: The horticultural interest of the United States comprise one of its basic industries the approximate commercial value of the product derived therefrom being one billion dollars annually; and

WHEREAS: The welfare of the whole people of the United States depends largely upon the fostering and developing of these interests; and as there exist throughout the United States many state and other organizations for fostering and developing the various allied interests comprising the general field of horticulture; and as the work of all of these organizations and societies is carried on without unity of purpose and proper co-operation and co-ordination; and

WHEREAS: It is believed by many leading members of these organizations, state and otherwise, that the general welfare of the whole horticultural industry throughout the United States can be best conserved and developed by one general body comprising in its membership all of the separate organizations; and

WHEREAS: The National Council of Horticulture, a delegate body organized at Washington, D. C., Nov., 1916, up to the present time the only national organization endorsing these principles and having for its object their promulgation:

The Congress is strictly a delegate body to be composed of state horticultural societies, national societies and organizations both commercial and others. Our Society, as usual, heads the list of members.

Use honey, corn sirup, dark sirup or maple sirup with hot cakes and in bread and muffins.

Not "Bit" But Utmost.

The expression "do your bit" became popular in England when the war was still regarded as a storm that would soon blow over.

Then came the tragedy of Ypres with its appalling English losses, and England and her girdling commonwealths faced the grim truth, that the war was a life and death struggle with the autocratic power of Germany—that the invasion of Belgium was a violation of the good faith of nations—that imperial Prussia must be punished or her dogma of "might is right" would drive from the world those principles of democracy that now bind together the British Empire.

A great people faced a great danger, and the trivialty of "doing one's bit" disappeared. Not one's bit but one's utmost was demanded of every citizen of the United Kingdom.

Every nerve was strained toward that maximum efficiency necessary for victory—factories were put in high gear, the manufacture of luxuries curbed, ship building was speeded up, imports cut down, food waste reduced to a minimum, women substituted for men in factory and field—in short every force was directed to the common end, the defeat of Germany.

England did not accomplish this reorganization in a day or a month; but day by day, as war became the prime factor directing all business, the single purpose of the Empire imposed itself upon the interests of the individual. The spirit of embattled England was emblazoned one day through the streets of London by women workers in munition plants. On this banner was the legend.

(Continued on page 76)

Wisconsin Horticulture

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Secretary W. S. H. S., Madison, Wis.

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Postage stamps not accepted.

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Convention Notes.

The proceedings were marked by seriousness and earnestness. Never in recent years has the attendance been as good. Usually during sessions one-third or more of the members might be found in the lobbies or lounging around the fruit exhibit but this year both places were deserted as long as there was any chance to listen to papers or ask questions.

A very complete newspaper report of the convention appears on another page written by Mr. E. R. McIntyre of the department of agricultural journalism at the university and published in the Wisconsin Farmer of Dec. 20. Mr. McIntyre attended every session and has given us a very comprehensive account of the proceedings.

The score card system of judging fruit as conducted by Prof. Moore at the state fair was adopted this year at the convention and with satisfaction to everybody.

The fruit exhibit excelled in quantity and quality that of last year by at least 25 per cent.

Mrs. Whittlesey secretary of the state cranberry growers association gave us a big idea. When forwarding entries for the cranberry exhibit she wrote: "Do not return the berries but sell them and turn the money over to the Red Cross." Thus was born the big idea that netted $36.60 for the Red Cross not from cranberries alone for when the vegetable and apple exhibitors were approached every one contributed, some their entire exhibit others such part as had not been sold at private sale before the announcement was made. Our versatile president besides being a perfectly good president and successful market gardener is also, it seems, an auctioneer, at any rate his skill was not questioned when he secured 25 cents a piece for onions, and a dollar for 4 ears of pop corn.

Most of the exhibits, pecks and plates of fruit and pecks of vegetables, were bought for use and only once did the bidding get into the field of friendly rivalry to see who would do the most for the cause when Sheriff "Hank" Ireland of Madison tried to get the peck of 1st premium Wealthy apples away from A. W. Bellitz of the Revisor's office. Mr. Ireland quit at $2.75. Mr. Bellitz immediately turned the apples back and this time the peck brought $1.50.

The auction idea is a good one. Even if no contribution cause is involved it is a satisfactory method of disposing of the exhibits.

Significant and Encouraging Facts.

Prof. Moore presented a paper at the convention entitled Some Recent Significant Facts in Horticulture, marking certain mile posts and danger signals for the horticultural society. It was extremely well done but naturally covered only the period of 1917 up to the convention. If Prof. Moore could now rewrite this paper there is no doubt he would include one other significant fact, the organization of two auxiliaries to the state society, the woman's auxiliary and a group of commercial fruit growers as yet without name.

This shows that the society is growing not only in numbers but in influence and scope. The society has grown beyond a mutual admiration society, beyond petty selfish aims, beyond the point where its influence or prestige may be used for the benefit of any particular individual or line of business and now it appears it has grown to include factors that want to unite to the end that they may not only help themselves but through the society help to an even greater extent than before in the promotion and uplift of horticulture in our state. Truly we are growing and in the right direction.

Helping Hands.

A group of women who have attended conventions for years got together this year and organized a Woman's Auxiliary Club.

The following officers were elected: President, Mrs. E. L. Roloff, Madison; vice president, Mrs. N. A. Rasmussen; secretary,

Mrs. L. H. Palmer, Baraboo; treasurer, Mrs. C. E. Strong, West Allis; Board of Directors, Mrs. Wm. Longland, Lake Geneva; Mrs. R. J. Coe, Ft. Atkinson; Mrs. M. E. Brand, Madison; Miss J. Lundauer, West Allis; Mrs. C. E. Estabrook, Milwaukee; Mrs. W. E. Lovell, Omro; Mrs. A. R. Reinking, Baraboo; Mrs. S. N. Whittlesey, Cranmoor, and Mrs. D. E. Bingham, Sturgeon Bay. In addition to the above the following signed as charter members: Mrs. John Leuders, Madison; Mrs. J. J. Ihrig, Oshkosh; Mrs. G. W. Reigle, Madison; Mrs. W. A. Toole, Baraboo; Mrs. L. E. Birmingham, Sturgeon Bay; Mrs. Geo. Miller, Oshkosh; Mrs. Wm. Nelson Oshkosh; Mrs. F. Cranefield, Madison, and Mrs. F. B. Sherman, Edgerton.

Committees were appointed on by-laws, membership, program etc., all to report at the summer meeting.

The aims and objects of the club are expressed in the title, auxiliary,—which means aid, help.

A Call for Volunters.

The Gardener's Advisory Council is now more than a mere name. It represents a band of earnest workers who gave freely of their time to help beginners in gardening.

We were all handicapped last year on account of lack of time and everything had to be done within one short month at least anything that was worth while. This year we can begin earlier and the experience of the past season will guide us in the right direction.

The board of managers last year selected 100 names from our membership list advising each that he had been "drafted" as a garden advisor. The idea was to cover the entire state as far as possible, but fortunately our membership is not evenly distributed over the state. In some cities we have a few members, in others of considerable size none at all. In Oshkosh, for instance, we have over one hundred members but in La Crosse not one. Again, the secretary who was called on to make up the "draft list" was obliged to depend, in many instances on chance, not having personal knowledge of the fitness of the persons selected.

This year the "draft" system will be changed to the "volunteer" plan. Those who worked last year will be asked to volunteer for another season's service and the lists are now open for other volunteers. Who will help? We will need not 100 but 500 or 1,000 helpers in the garden work. We want especially good amateur gardeners, those who have been successful in raising the commoner garden vegetables to volunteer; first, to begin now to make a garden survey of your neighborhood, ward or city to find where gardens can be planted, vacant lots that can be had free etc.; second; to find people, men, women or children to plant gardens either on their own premises if land is available, otherwise on the vacant lots; third to look up seed supplies and suggest to prospective gardeners amounts required In fact one who has made a garden will readily think of many other things that can be done. After you volunteer the fact will be mentioned in your home paper and people invited to call on you for advice.

The actual time that you will be required to take from your work or your business will not be great, much of the help can be given by telephone during the planting season. It means that you will give up your leisure moments, that you will often be disturbed when you are tired, that on account of this you will work longer days than you have been accustomed to work but I have yet to meet a horticulturist who was unwilling to do that. So many good-hearted loyal people are wondering what they can do now to *help*. If you know how to plant and tend a garden here is a chance. We will need dozens of volunteers in Milwaukee and more than one in every town and city. In doing this we are doing our part just as truly as the conscientious farmer who is straining all his resources to raise more food; as much as any one who is engaged in manufacturing clothing or munitions even more, as food is the *first* essential to success. Do you want to do your share? Send in your name to Secretary Cranefield at once. We need at least one hundred women. Last year we were able to locate only a few. Women are the very best of garden advisors. We need helpers from small communities as well as from the larger places. We need advisors from the country as well as from the city. The lists are open! Who will be first?

If you are *sure* you cannot qualify as a garden advisor please name some one who can. It is not essential that the one named be a member of the society, we want volunteers wherever they may be found.

If you must sweeten breakfast cereals, try figs, dates, raisins, sirup or a light sprinkling of maple sugar.

Replace white sugar candies with sirup candies, or sweets made from figs, dates, and raisins combined with nuts.

Estimates Nation's Insecticide Needs.

To procure for farmers an ample supply of insecticides at fair prices, the Division of Chemicals, U. S. Food Administration, urges users to report indications of unreasonable prices or unwarranted attempts to force the placing of orders on the plea of scarcity of materials.

By the President's recent proclamation placing the arsenic insecticide industry under government control the Food Administration now has general supervision over the market handling and distribution of this class of chemical products. The Administration is now taking stock of the Nation's probable insecticide needs for 1918 as a preliminary step for out-maneuvering attacks of pests on the food products grown during the coming season.

Officers of agricultural and horticultural associations in all states are requested at once to make an estimate or census of their requirements and those of the state and send these estimates to the Division of Chemicals, U. S. Food Administration, Washington, D. C.

"It is hoped" declares C. W. Merrill, head of this Division "that farmers' organizations will take carload lots of insecticides from the manufacturers at a wholesale price. In the determination of this price, excessive profits will not be permitted. Such organizations are also urged to provide not only for immediate wants but also for the maintenance of a stock of insecticides in order to insure against loss of crops through sudden insect plagues."

The Division of Chemicals will be glad to put officers of such organizations in communication with the nearest wholesaler who is in a position to supply their requirements. By such procedure, the elimination of unreasonable profits and the shortest route from the producer to the consumer can best be secured.

Yellow

It was a little yellow cur, with battered hide and stumpy tail,
Whose life path was a weary round from village dump to garbage pail.
A mongrel, mangy, fleasome pup, the sort which men forbear to shoot,
But frighten yelping up the street with stone or stick or lifted boot.
And this same cur, one autumn morn, sat sadly down to scratch, and try
To answer this soul-searching quiz: "Lives there a creature low as I?
Breathes there one living thing"—so ran his pessimistic monologue—
"Which, viewed apart by decent folk, is meaner than a yellow dog?"

He thought and thought. "Suppose," he mused, "I were a man born o'er the sea,
Who fled from hopeless, slavish toil to this bright country of the free;
Where, lifted by that country's hand, reared 'neath her laws, I rose to power
And comfort, station, wealth—until to her, Columbia, came the hour
When, fighting for her life, she asked my aid, and I refused, and tried
To help her foe, because, forsooth, I hated one she fought beside.
I am a yellow dog," his tail gave to the road one earnest pat.
"Men call me mean and low; but still I think I'm not so mean as that!

"Or shall we postulate this case? An editor am I, whose pen
Writes, in an alien tongue, the words read by some still half-alien men
Whose fathers came, as mine did, here, forswearing all they left behind,
To sieze the chance she offered—she, America, the great and kind!
All that I have and am I owe to her; but now, when foes attack,
With venomed pen I lie in wait to slyly stab her in the back.
I'm sure," the pup soliloquized, as in the roadside dust he sat,
"No yellow dog of all I know has such a yellow streak as that!

"Or let's suppose," quoth he, "I am a politician of the breed
Which, seeking place, cries shrilly, 'Peace!' and strives the foolish mob to lead.
I rail 'gainst duty, honor, truth, my country's name and flag—and all
That I my slimy self may drag a little higher up the wall.
Suppose I were a thing like that! Suppose in hall or senate I——
But no!"—the cur leaped to his feet—"I'll not suppose it!..No; nor try!
I am, thank God, a yellow dog." He trotted off with head erect.
Compared to these, he felt he had abundant cause for self-respect.
—Joseph C. Lincoln.

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Somewhere in France.

Mr. Ernest Gonzenbach of Sheboygan, one-time member of the executive committee, who is well known to many of our members is now "somewhere in France." Mr. Gonzenbach, a civil engineer by profession with many years of successful experience in railway construction work, was manager of an electric line running out of Sheboygan at the time of the declaration of war.

Although far beyond the draft age, engaged in work suited to his taste and talents, with a delightful home and family, a little farm and orchard where his hobby, fruit growing, might be indulged, without hesitation he enlisted in the first corps of engineers organized for service and is now at or near the fighting front and for all we know was engaged in the Cambrai offensive.

The following letter from Mr. Gonzenbach was received early in November:

Somewhere in France,
Sept. 8, 1917.

My Dear Cranefield:—

It may interest you to know that we are stationed in a rich farming section of France and the country looks much like that between Madison and Baraboo. There is much fruit growing but no large orchards, the largest I have seen are 2 to 3 acres and these mostly dwarf varieties of standard apples and pears. They seem to make a success here of dwarfs, and they are also used extensively as espaliers

trained on the stone walls of houses and lawns. All fruit trees are well pruned but spraying is not much in evidence. This is of course not the spraying season but I have seen no spray outfits and the native "habitants" shake their heads when I ask them,—they have heard of it and to them it's one of the strange things of life. In spite of the lack of spraying there are comparatively few wormy apples, but in the ones I have bitten into the worms sem fatter, healthier and happier than any I have ever seen in America. They taste richer too.

I have the advantage of speaking French fairly well and make it a point to talk with as many farmers as possible and it's really wonderful what sacrifices these people have made for their country—and how they do welcome the Americans! We shall all be like spoiled children when we get back. They have cows too, but I hope Prof. Humphrey and Dean Otis will not visit this section for if they should they would get the shock of their young lives. No ventilation, and stables hermetically sealed. No gutters behind the cows and flanks and udders of cows hung with caked manure like sleigh bells. Otherwise the cattle look sleek and fat and resemble a cross between a Guernsey and Hereford, giving an amount of milk about like a Hereford and beef like a Guernsey.

The flowers in the dooryards are wonderful and not a farmhouse without a great splash of color and an aroma like a florist's shop. The flowers are mostly annuals.

I hope you will keep an eye on that orchard of mine up at Sheboygan Falls and please send me regularly an extra copy of Wisconsin Horticulture.

There are a lot of German war prisoners at work around here and if I shut my eyes at roll call I can make myself believe it's a roster of the Wisconsin Legislature. My mailing address is and will be,

Captain Ernest Gonzenbach,
16th Engineers, U. S. Army in France,
Care Adjutant General,
Washington, D. C.

Mr. Slice O'Bread.

I am a Slice of Bread.

I measure three inches by two-and-a-half, and my thickness is half-an-inch.

My weight is exactly an ounce.

I am wasted once a day by 48,000,000 people of Britain.

I am "the bit left over;" the slice eaten absent mindedly when really I wasn't needed; I am the waste crust.

If you collected me and my companions for a whole week you would find that we amounted to 9,380 tons of good bread—

WASTED!

Two Shiploads of Good Bread!

Almost as much—striking an average—as twenty German Submarines could sink—even if they had good luck.

When you throw me away or waste me you are adding twenty submarines to the German Navy.

(Copy of handbill sent out by National War Savings Committee, England.) For the United States multiply this by 2¼.—Editor.

Sweeten fruit drinks with honey or corn sirup.

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company

Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or samll quantities.

Wauwatosa, Wis.

"Brer" Rabbit Can Do His Bit

At festival season the rabbit has always held a place of honor on the English board. A Christmas stagecoach without its full hampers and dangling rabbits for town tables would not have been a stagecoach at all. Mr. Pickwick would not have ridden in it, and there would have been no pretty Arabella with fur topped boots. Thanksgiving—1917—should see the American rabbit raised to the food peerage or knighted upon the field. "Brer" Rabbit elevated to Sir Rabbit may then well break a lance with Sir Lion and drive him from the lists.

The rabbit has such possibilities that you can hardly go wrong when you have once caught your rabbit. What can you do with a rabbit? Exactly what you can do with a chicken—roast, pan, fry, fricassee, and a dozen ways besides. Try one of these for your Thanksgiving dinner.

Roast Rabbit—Wash the rabbit with soda water. Lay in salted water for an hour. Stuff the rabbit with onion, celery or chestnut dressing and sew up. Line a baking pan with the following: one onion and one carrot cut up, a few cloves, whole peppercorns and one bay leaf. Rub rabbit with salt and pepper and lay it upon this dressing, putting fat or oleo here and there over the rabbit. Sift a little flour over the top and pour a cup of stock or hot water into the pan. Cover tight and roast, basting frequently. When ready to serve, put on a hot platter and garnish with slices of lemon and cranberry jelly or currant jelly.

Spiced Rabbit—Wash rabbit in soda water. Disjoint hind legs; cut off the saddle; remove the forequarters, making in all nine pieces. Lay in salt water about an hour. Place rabbit in dish with vinegar poured over it and let it remain over night. Remove from pickle, salt each piece lightly, and arrange in baking pan. Cut up an onion in it, adding one bay leaf, a dozen pepper corns, part of a celery root, a cup of stock, and a little vinegar from the pickle. Cover with another pan, put in a quick oven and bake an hour. Remove upper pan, and brown, basting frequently. When brown, remove and arrange pieces on a hot dish. To the pan add a tablespoon of flour browned in fat drippings and a cup of stock. If not spiced enough, add pepper and a very little mace. If desired, add a can of mushrooms that have been drained and washed. Pour the gravy over the rabbit, dust with chopped parsley, and send to the table.

Chestnut Stuffing—Shell one quart of Italian chestnuts. Boil until skin is softened, then drain and remove the skins; put back in water and boil until soft and rub through a sieve while hot. Season the mashed chestnuts with one tablespoon bacon fat, one teaspoon each of salt, grated lemon rind and chopped parsley. Add three tablespoons of grated bread crumbs and two well-beaten eggs. Be sure the stuffing is not too wet.

NOT "BIT" BUT UTMOST

(Continued from page 71)

THING AND SEND THEM PLENTY OF MUNITIONS."

This today is the imperative call of America to every citizen, "Drop every mortal thing and send them plenty of munitions, fuel, food and ships." Does personal business block the way? Sweep it aside, and stand by the soldiers, we owe them everything.

Not "bit" but utmost is our country's need. What is a "bit"? According to the dictionary the smallest quantity; a whit; a jot. Is a "bit" then the offering of America to a bleeding world? A "bit" the toll a patriot pays for the defense of the flag? A "bit" the price we pay for sons who give their all that we may live?

The war has reached a grave crisis. America's share grows ever bigger. The war zone stretches from San Francisco to Berlin. Every individual is personally responsible for holding that line. Our business now is war, and "doing one's bit" should have no place in our vocabulary or thought. America has undertaken the most gigantic task in military history, a task that calls for our *utmost* in strength and intelligence. Solidarity in America and unity of aims with our Allies mean victory, and the guarantee, in all the ages to come, of human liberty and secure peace. The end is worth our *all.*

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year
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Help Wanted
Reliable young men for farm and garden work. Will hire by the month or for the year. Write
Rasmussen's Fruit Farm
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An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Four-and-Twenty Sparrows Baked In a Pie.

Jacob Riis describes in one of his delightful essays how the good old housekeeper in his Danish home used to climb to the eaves to rob the sparrows' nests for a delectable pie. Now Mr. James Hunt of Philadelphia, who is crusading against the English sparrow, advocates the pie as the true destiny of the sparrow. He furnished the sparrows for such a pie opened in Washington recently at a luncheon served by the Philadelphia Public Ledger.

The guests declared that the pie was good, and the flavor of the sparrow was superior to chicken and equal to partridge. Washington boys found this out long ago in their secret sparrow roasts where dozens of these tidbits were spitted on wires before the blaze and devoured by these food pirates.

Cleaning a sparrow is a simple matter of cutting the breast away from all other parts and skinning. Special traps are used for catching sparrows. These are set near favorite rookeries and dozens of sparrows are caught at a time.

HARDY OLD FASHIONED PLANTS

OUR SPECIALTY

The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices

WILLIAM TOOLE & SON

Hardy Plant and Pansy Farm Baraboo, Wis.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the bestthat can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

The Kickapoo Valley WISCONSIN'S FAVORED FRUIT DISTRICT

Our Specialty: Planting and Developing orchards for non-residents. A few choice tracts for sale. If int crested, write us.

KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

THE ANNUAL CONVENTION

(Continued from page 67)

plenty of excellent fruit establishes a higher average price level to start with. The other point is that consumption and demand are always greater and more even when an abundance of high-grade stock is on the market for the public to admire and buy more generally and readily.

Strawberry culture, particularly that of the late varieties, was discussed by M. S. Kellogg, Janesville. These ever-bearing, "double-barreled" varieties will yield a late summer crop of excellent quality with the proper care. They have probably shown success as a home garden crop rather than a commercial proposition in Wisconsin thus far in the trials, Mr. Kellogg stated. Their backwardness in securing public favor as a dependable commercial crop was laid to the strong competition which the everbearing kinds must face in a market glutted with peaches, pears and early apples. From now on the success of the everbearing kinds depends solely upon a vigorous campaign of education, to set the public at rest as to their merits and calling the housewives' attention to the fact that all home-grown strawberries are not gone by the second week in July. Mr. Kellogg also urged farmers to consider small fruits more carefully next spring, as they would aid the sum total of food production on odd corners of the farm at little expense in time and a relatively small labor outlay, results in average seasons considered.

The best varieties, honesty and care in packing—with or without a state law—were the maxims for successful commercial apple production set forth by A. K. Bassett, well-known Baraboo fruit farmer. When Mr. Bassett bought his present farm it contained a fifty-year-old, neglected orchard. He cleaned, renovated, sprayed and pruned and has since set out sixty-five acres to apple trees. Although receiving an average of $6 a barrel this season, f. o. b. Baraboo, for his winter stocks, with less valuable kinds selling for 75 cents a bushel, containers returnable, Mr. Bassett complains of labor shortage as a drawback to expanding his business just now. His earlier varieties are the Snow or Fameuse, McIntosh, Wealthy, Northwestern Greening and the extra early Duchess of Oldenburg. For strictly winter keeping qualities, he supplies his trade with Salome, Windsor, Russett and Tolman Sweet. All these he has found adapted to south-central Wisconsin conditions over a period of ten years. Mail order shipments direct to consumers took 40 per cent of his crop this year, and dealers in northern and western Wisconsin towns took most of the remaining lots.

Not forgetting the side of home life which ministers to the soul, and helps to imbue a stronger love of country, talks on farmstead planning for beauty as well as utility were given by F. A. Aust and Cecil Britt, University of Wisconsin. Mr. Aust explained the elements to be sought in landscape architecture, using good, hardy Wisconsin vines and shrubs advocated by the college of agriculture and the horticultural society. Mr. Britt, a veteran gardener who comes from Warwickshire, England, with much lore about rose culture, gave the society an interesting ten-minute talk on the chief things which Wisconsin must look for in the successful growing of the national flower of Albion.

R. H. Roberts, of the university horticultural department, in his

McKAY NURSERY COMPANY
MADISON, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

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when you think of
"SCALECIDE"
it is all there is to
Dormant Spraying

Does *all* that any other spray will do —but no other spray will do *all* that "SCALECIDE" will do. Kills all kinds of scale—all forms of fungus and insects that can be reached in dormant season—and invigorates your trees—and costs no more *Read our money-back proposition* before ordering anything else.

Send for free booklet, "Profits in Fall Spraying"

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SEND FOR LIST

J. E. MATHEWSON
SHEBOYGAN, WISCONSIN

paper on the cause and control of winter injury to cherry blossom buds, attributed it chiefly to the condition of the buds when winter starts. The more developed the buds are at this season the more susceptible they are to harm. These observations lead one to conclude that much of the winter injury common to older, weaker-growing trees could be prevented by maintaining a more vigorous tree, and thus arrest the extreme development of the blossom buds to the stage at which they are found to be very subject to frost.

More action for central frost-proof warehouses where cranberries could be sorted and shipped with less delay and loss due to frequent and careless handling is the crying need of Wisconsin, said E. K. Tuttle, Tomah, in a brief discussion. At present each grower in the Badger cranberry area works practically alone in his own warehouse in spite of greatly improved conditions brought about by recent successful organizations. Wisconsin raised between 20,000 and 30,000 barrels of cranberries this year, Mr. Tuttle says. Most of the larger, fancy varieties are shipped west, although Chicago annually receives much Badger stock.

Excellent progress in control investigations with respect to the cherry leaf spot was reported by G. W. Keitt, plant disease specialist, University of Wisconsin, who has been conducting coöperative experiments with Door county growers for the past three years. Turning under of dead leaves before blossoming time, plus two, sometimes three spray applications later in the season works wonders against this disease of the cherry. Mr. Keitt and coöperating growers found that three pounds of copper sulphate mixed with three pounds of fresh lime to fifty gallons of water was as effective for commercial control of cherry leaf spot as the 4-4-50 solution. In times of high prices for spray chemicals this means quite a saving besides. The only possible substitute for Bordeaux mixture in times of high prices is lime sulphur, Mr. Keitt says. This, at the rate of five to six quarts to fifty gallons of water in combination with arsenate of lead for insect control, is advised.

Household Helps by U. S. Food Administration

SUGAR-SAVING DESSERTS

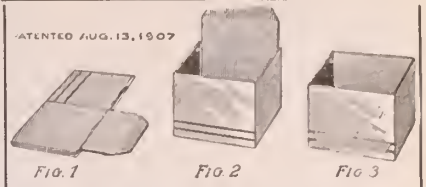
Saving sugar is imperative at this stage of the war, and the U. S. Food Administration offers the following recipes, tested by practical housekeepers, as ways for the thrifty farm housewife to aid in the national sugar economy campaign:

Pumpkin Pudding—2 cups stewed pumpkin; ½ cup brown sugar; ½ cup honey or maple sirup; 2 eggs; 1 tablespoon flour; 1 teaspoon cinnamon; ½ teaspoon nutmeg; ⅛ teaspoon cloves; ⅛ teaspoon ginger; 1 teaspoon vanilla; 1 pinch of salt; 2 cups of milk.

Mix all ingredients and bake in greased pudding dish. Serve hot or cold.

Peach Souffle—1 quart canned peaches; ½ cup honey or sirup; 3 eggs.

Drain and mash through colander one quart of canned peaches. Add one-half cup of honey or sirup and well beaten yolks. Beat thoroughly, then beat whites stiff and fold carefully into the peach mixture. Turn the whole into a greased baking dish and bake in a quick oven six minutes.



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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, February, 1918 | Number 6

WHY AMERICA ENTERED WAR

WE entered this war because violations of right had occurred which touched us to the quick and made the life of our own people impossible unless they were corrected and the world secured once for all against their recurrence. What we demand in this war, therefore, is nothing peculiar to ourselves. It is that the world be made fit and safe to live in; and particularly that it be made safe for every peace-loving nation which, like our own, wishes to live its own life, determine its own institutions, be assured of justice and fair dealing by the other people of the world against force and selfish aggression. All the peoples of the world are in effect partners in this interest and for our own part we see very clearly that unless justice be done to others, it will not be done to us.

From President Wilson's Address, January 8, 1918.

What One City Accomplished in War Garden Work

Anna A. Ihrig, Oshkosh

Presented at Annual Convention, Madison, Dec. 12th, 1917

I am glad to tell you of the measure of success we have secured in Oshkosh the past season. While we deplore the cause, we can but rejoice in the impetus givn to our home gardens by our war gardens.

We who are familiar with gardens, who know their worth not alone from an economic standpoint, but as an indispensable adjunct to all home life, to individual character and to normal growth from childhood to old age, can only be glad that we are what we are. That we were ready when the need came and are doing our bit. The Rotary Club of Oshkosh started a movement for a more beautiful and efficient city early in the year. When the war garden cry was heard simultaneously all over the land, emphasis was placed on efficiency. The Rotary Club voted $400 to finance the garden movement and placed this sum with their Garden Club committee. This committee was ably seconded by every available force in Oshkosh, the people the press, the commission council, the school board instructors in both city and normal schools, the various business clubs and social societies, including our local Horticultural society. This committee of the Rotary club, with the able assistance of Mr. A. S. Hotchkiss, directory of recreation, and Mr. T. W. Garry, director of the Community club, perfected a plan of work which has given Oshkosh an excellent season's work, aroused the enthusiasm of the entire city and placed it in a position to continue the work next season without the handicap of inertia in any vital point. There are four classes of members in the Oshkosh Garden club, junior membership, limited to children under sixteen years of age; home garden membership and plotted vacant lot garden membership, each without any limit and entire vacant lot membership, limited to adults. A fee of ten cents was required of junior members upon payment of which they received a membership ticket and were guaranteed, 1st, one book garden instructions; 2nd, visitation, advice and supervision during the season; 3rd, the right of entry into contests for prizes in district and final contest; 5th, packages of seeds as follows: Two flowers, three vegetables and five tomato plants. They agreed to cultivate not less than 100 square feet of garden during the season at home.

Home garden members' fee was 25c and they received five vegetable seed packets and were required to cultivate at least 200 square feet of garden, other conditions being the same as for juniors.

The Rotary club offered the following prizes to juniors: Five prizes of fifty cents each at each of two preliminary exhibits to be held in each of ten centers during the season. Five prizes at each of two final exhibits at the City Hall as follows: 1st, $2.00; 2nd, $1.50; 3rd, $1.00; 4th, 75c; 5th, 50c. Prizes for best junior gardens during the entire season: 1st, $5.00; 2nd, $3.00; 3rd, $2.00; 4th, $2.00, and 5th, $2.00. Total prizes to juniors $75.50.

Home gardeners' prizes were also offered, but as there were only a small number of the latter, they were classed with the juniors. The club caused to be printed one book of instructions, of which I have a sample. It contains Instructions for Planning, Rotation of Crops, Planting, Transplanting, Cultivation, Irrigation, Thinning, Spraying and miscellaneous advice. A page is allotted to each important vegetable, giving a brief history of the plant, soil preferred, time and manner of planting, quantity of plant, culture, enemies, and season of maturity. In the preparation of this book the committee was assisted by members of the local Horticultural society. A thousand copies were printed at a total cost of $90, which was paid by the advertising matter which it contained.

Besides the book of instructions the printed matter used consisted of membership blanks. A card containing the rules and regulations of the club and the prizes offered, together with a printed blank application for membership. A card for the use of supervisors in grading the gardens and a cordial invitation to attend the exhibits. There were 445 gardens in these two classes, 435 juniors' and 10 home gardens. These were divided into ten districts and supervised by the directors of the various Playground centers, 1,347 visits being made. The gardens were scored on the following points: General Impression, Drainage, Cultivation, Lack of Plant pests, Healthy Growth of Plants and Weeding. A card index of each garden showing the score for each visit was kept and the final award went to the one having the highest score. Two brothers were tied for this honor, having 560 points

out of a possible 600, and the first prize was divided between them.

An exhibit was held at each center in July and again in August. Also two finals one in July and one in August. The vegetables grown were radish, carrots, beets and tomatoes. Director Hotchkiss placed a conservative estimate of the value of the vegetables grown in these gardens at $2,000 for the season. Of these gardeners 90% had never before made a garden.

The vacant lot gardens plan resolved itself into a plan to bring vacant lots and gardners together. The commission council financed this movement and plowed or spaded such lots as were made available by donation of the owners of the lots or otherwise. Mrs. E. R. Smith was in charge of the work. She reports 1,000 gardens. These were furnished to members of the Garden club who paid a fee of from $.50 to $2.50 according to the size of the plat received. In this class preference was given to those whose names were found on the city poor list and to these were furnished seed potatoes and seed beans with the understanding that the seed should be returned in the fall. $150 worth of potatoes were used and about 2 bushels of beans. The plots of ground ranged from plots 20 ft. square to those containing as high as 20 acres. The larger areas were allotted in acre or half acre plats. These gardens were taken almost entirely by persons who knew something about gardening and were very productive except in a few cases where quack grass was abundant. Several lectures were given at the city hall by members of the Oshkosh Horticultural Society and our Mr. Roe, Mr. Rasmussen and Mr. Christensen acted as a self constituted committee to extend garden knowledge to all who were in doubt. These gentlemen also gave freely of their services in judging exhibits and otherwise assisting in this movement. The plan for next year is to continue the work along these lines using the knowledge we have acquired this season for a better campaign next year.

Before closing this report I wish to call your attention to the value to a community of a live Horticultural Society. In every locality there are men and women who know the value of a garden, who know the pleasure of gardening, who know the appeal of growing things, who rejoice at the instant response for the little care given a plant and who would be lost without their garden. These people should be waked up and made to see the value of organization and there should be in every community a local society, be it great or small, which will cooperate with this, our state society, in bringing the value of a garden home to their neighbors and their neighborhood.

I earnestly urge all members of this society to give some thought to the value of a garden for every home and do their bit to bring about such a condition.

Black Raspberry Culture

Frank Hays, Wyanet, Ill.

(Read at convention of N. Ill. Hort. Society, De Kalb, Ill., Dec. 6th, 1917.)

The black raspberry, if properly grown, is a fine attractive fruit; but the dried-up seedy kind we frequently see is about the sorriest thing in the way of fruit that one can think of. But there is always a big demand for good ones. In Bureau County, where I live, there are never nearly enough to go around, and I understand the same condition exists over a large part of the state. The taste people have for it is indeed remarkable. It is no wonder this society is interested in so popular a fruit

The successful growing of the black raspberry has for at least twenty years been considered quite a problem. The difficulty is largely due to a widespread disease that attacks the plant and causes that scabby condition we so frequently observe on the bark and we must to a large extent avoid that condition or we can't succeed in growing profitable crops. We must avoid the scab rather than depend on any spray mixture to control it. So far as I have been able to learn, there has not yet appeared an effective and practical spray for that sort of scab. The best way I have found to beat it is to have the patch on good fertile soil and put the plants in close—eighteen inches apart in the row and use only good, strong, freshly dug plants. Hoe and cultivate frequently until toward fall. When plants are up about sixteen inches go along the rows with a knife and hack off a couple of inches of the tops; that will make them branch out and form much better bushes.

You should have by fall a thick growth of strong, healthy bushes, large enough to yield a profitable crop of the finest berries the following year. But if the plants had been set two and one-half or three feet apart, as is often recommended, there would not have been enough of them to make the

plant growth necessary to produce a worthwhile crop. It would be like a farmer planting one kernel of corn in a hill. Unless we can grow the first season bushes thick enough and large enough to produce a profitable crop the following year, we **never will** get from that field a profitable crop, the scab will take it before it has time to amount to anything. Scab does not show up so much the first year, but about the second season there is an abundance of it; however, if we have a thick, hardy growth of bushes the first year, the new growth of the second year will also be thick and a good deal of it will, of course, be affected with scab, but where there is an abundant growth of bushes, though there be as many as half of them affected, we can cut out the diseased ones and still have left enough healthy canes for a fairly good stand. But if we had only a weak, thin stand to start with there would not be enough of them escape the scab to be worth while to leave. A bush if well cultivated will mature its fruit even if somewhat affected, but if practically covered with the disease it should by all means be cut out for the berries will dry up in spite of us. Don't try to get more than two crops from the same planting. I have tried it several times and failed every time. Put out a new patch every spring. To keep the system going, arrange it as follows. If you wish to fruit say four rows each year, two of these rows should be yearlings, and two rows should be two-year olds and you should plant in the spring two new rows and you should mow off and plow up the two rows of two-year-olds as soon as you have taken from them the season's crop.

For a number of years I have set the rows six and one-half feet apart but I believe six feet will do just as well, so next spring I shall set them that width. I mark out rows with single shovel the same as marking out for potatoes. I use plants from my own patch, usually taking them from the rows of the yearlings. Wherever a branch of the black raspberry touches the ground it takes root provided the soil is loose and the season not too dry. In a well grown patch there are hundreds of such plants. But it is a good plan to go in with a hoe about the middle of August and pull some dirt over the tops, even bending down some of the branches and covering them. It will help them to take root sooner and form stronger plants.

The system I am describing requires a lot of plants, and we must be careful to propagate all we can. The first trimming of the patch should be done the following spring. There has been a lot of discussion as to whether or not it is a paying proposition to provide a trellis of some kind to support the bushes. I am one of those who consider it well worth while to wire them up. Without a support of some kind the wind blows them over and breaks off a lot of good canes. And at fruiting time a lot of the berries are down in the dirt and have to be discarded. Also they cannot be thoroughly cultivated while in that shape and the grass and weeds have a better chance to start and the patch has a pretty slack appearance generally.

The material to wire them will last for years, so the annual expense for material will figure low. It requires considerable labor, but that is more than balanced by the saving in bushes, the better cultivation afforded, the better condition of the fruit and the convenience and satisfaction of having them in such perfect order. I have a system of wiring that I have not seen used elsewhere, but of course it may be elsewhere. I set one post at each end of the row. With a post auger I bore down four feet and put in 6 foot posts, leaving two feet above ground. Set at that depth they require no braces. Next drive a stake every thirty feet in the row. To get the stakes I take seven-foot round, white cedar posts and saw them in the middle, then quarter each half and sharpen them with a hand ax. In that way one post costing 30 cents will make enough stakes for a row of berries two hundred and seventy feet long. Drive the stakes down good and solid but leave at least two feet above ground. Then nail to the stakes a cross-arm, after the fashion of the cross-arm on a telephone pole. The cross-arms should be one inch thick, fourteen inches long and two or three inches wide, —whatever one happens to have, —and should be nailed 20 inches from the ground.

Now everything is ready for the two trellis wires. The size of the wire should be number 12 or 14. On one of the posts of each row should be fastened a couple of ratchets, one on each side of the post. The ratchet is a little device with which the wires can always be kept tight by turning up with a monkey wrench. They cost about three cents apiece and can be secured from most any mail order house. I would not

think of doing without them. The best way to attach the ratchets to the post is to first fasten one to each end of a fifteen inch piece of trellis wire by twisting the ends of the wire in the form of a hook and hooking into the eye of the ratchet, then closing up the hook so it can't slip off. Place this wire and ratchets crossways against the back of the post 20 inches from the ground and staple it midway between the two ratchets; then take the ratchets, one in each hand, and pull them forward toward the front of the post; attach end of trellis wire to roller of ratchet and string wire to other end of row, go around the post with it and back on the other side and attach wire to the other ratchet. Lay the wires up on the cross-arms and staple them one foot apart. Don't drive staple down tight against wire but leave so wire will slip through as it is tightened. It is a good plan to put across a tie wire half way between the stakes, otherwise the weight of the bushes is apt to spread the wires a little too far apart at those points. Any old rusty wire will do for that purpose. A roll of old telephone wire will furnish material for a long time. Now tighten up the wires by turning up the ratchets and all is ready to begin trimming.

For trimming use leather gloves. Go down one side at a time and with pruning shears cut loose from the ground all branches on that side that have taken root and as you go along bend all branches around and up between the wires, thinning out of course, if too thick, and removing all diseased branches.

The idea of tying raspberries is, I know, more than most growers can swallow. But we tie grapevines, often making two or three ties to one cane; while with raspberries we never tie a branch more than once and much oftener two at a time and frequently three or four at a time. Many are not tied at all as they are prevented from coming down by the tying of the others. So the work goes along quite rapidly.

For tying I use grape twine, such as is used in the Michigan grape-growing district. It comes in balls just the right size to go in the pocket and unwinds from the center of the ball.

To protect the hands while tying wear cotton flannel gloves with the ends of the thumbs and forefingers cut off, which liberates the fingers so they can make the tie. The twine is cut with the pruning shears, which are held between the knees while making the tie. It makes an easier job of it to trim a row, then tie a row. When the trimming and tying is completed it is time to dig out the plants from between the rows and set out a new patch. When plants are out of the way proceed to cultivate and hoe and do it frequently until along toward fall,—especially the cultivating. The new growth will begin to start soon after we are through trimming. Sprouts from the crowns of these yearlings will shoot upward very rapidly and we must give attention to those shoots for they are what form the bushes that bear the fruit the following year. Go down the rows occasionally with a knife and clip the ends from all shoots that are as much as eighteen inches high. The rows will soon be a mass of green and as attractive to look at as a well-kept ornamental hedge and will attract a lot of attention, especially along about the Fourth of July when they are covered with ripening fruit.

We are now done with pruning until the spring of the next year, when all badly diseased bushes must be removed and the branches on those we leave cut back.

The bushes of this second year's growth are much larger and stronger than those of the first year and with the support of the wire will stand without tying. It is a good plan at this time to bring the wires on the cross arms closer together, also to tie the wires between the stakes together. By so doing the bushes are more firmly held. Rake brush from between the rows and cultivate until crop is gathered; then mow it off and plow it up. Managed in this way the very finest of black raspberries can still be profitably grown.

SOME RECENT SIGNIFICANT FACTS IN HORTICULTURE.

Prof. J. G. Moore at Annual Convention.

There is an old saying to the effect that "Coming events cast their shadows before them." The prophet of old was the man who, reading the "signs of the times" had the ability to reason out what the logical result of the current action would be. We are horticultural prophets only in so far as we observe present tendencies and correctly interpret their ultimate influence on horticultural development. In interpreting the facts, we should be exceedingly careful not to let our desires for certain results prejudice our interpretation. We are all desirous of seeing horticulture and the horticul-

turist advance. Does the recent developments in Wisconsin horticulture warrant us in prophesying the attainment of those ideals for which we should at least all be working?

It is somewhat difficult to say which facts in horticulture may be of greatest significance. Doubtless were we all to make selections of those which we considered most important, no two of us would submit the same ones. Occasionally a fact seemingly insignificant, due to our inability to judge rightly, portends some of the greatest and most important developments later on. If I suggest some things which to you may seem unimportant, it is only because to me they indicate possibly the early beginnings of movements which later on will exert a great influence on Wisconsin horticulture.

At our Convention last year it was suggested that one of the great needs of Wisconsin Horticulture was a compulsory grading and package law. I think the most significant horticultural fact so far as Wisconsin is concerned is that we now have such a law on our statute books. In passing it is fitting to remark that it is a fact largely through the efforts of our Secretary.

What is the significance of this fact? At first we might say that the most important thing about this law will be that there is now removed in the selling of Wisconsin apples in closed packages the chance for fraud which previously existed and that much of the evil accruing from such practice will disappear. This certainly is a very important consideration, but to me this new fact in Wisconsin horticulture carries a hidden significance of even greater import.

I believe I am correct in saying that other than the nursery inspection law that this is the first law regulating the fruit industry to be placed on our statute books. That in itself is a significant thing but that which means most to Wisconsin horticulture is not the law but our attitude towards the law.

So far as I know no regulatory law was ever passed which did not meet with some disapproval. "It is hard to teach an old dog new tricks", and if he did crooked tricks, it is still harder because of his objection to learning how to play the game fair. The new grading law, is going to meet opposition. Some of it may come from influential men. Wires will be pulled and failures in enforcement will be used as reasons for its repeal. Who can hold this first line trench which has been captured? Organized horticulture! Cranefield may do his bit, the State Department of Agriculture and the University may help, but unless they receive the support of the organizations, the ground gained may be lost. I do not wish to appear as a pessimist, but I do want to impress upon you the importance of helping to make this law successful, not alone by giving it your moral support, but if necessary active support. We do not hesitate to say that probably all the members of the State Society favor a grading and package law and so far as their own crops are concerned will enthusiastically co-operate in its operation, but there are others who will need to be converted to the fact that it is beneficial to them and perchance need help in meeting its provisions. You owe it to the society and to the industry to do what you can to help make of such persons enthusiastic supporters of the law rather than conscientious objectors to it.

Perhaps some of us feel that we have reason to complain of some of the provisions of the law. Such is every man's privilege, but let us adjust our differences within our organization and then pull together rather than to lose by disagreement the ground we have already won.

Why is our united support so important at this time? Because this is our opportunity as a society and as individuals to give practical proof that we favor regulating legislation for the improving of our industry. This is not the only regulatory law which is needed. Perhaps some which we may desire in the future may not be obtained so easily, but if we expect such laws we will need to show the people of the state that we are a unit in supporting the laws we already have. Wisconsin is not alone in enacting regulatory laws regarding the sale of fruit. Sister states have recently enacted such legislation. This portends important legislation affecting the fruit industry of the entire country. A few years ago when attempts were made to get Congress to pass a compulsory grading and package law similar to that of Canada, strong opposition was met, largely upon the part of the fruit growers. As a result the Sulzer law, an optional grading law, which has been of no real value to the fruit industry, was written upon the statutes because a compulsory law could not be passed. Recent state legislation seems to indicate that at an early date Congress will enact a law standardizing so far as possible the grades and packages for apples and possibly some other fruits as well. Thus we see that

accomplished facts indicate greatly improved conditions under which we will market our fruit in the future.

Last spring we received a letter asking us to direct an orchardist in this state to some one to whom he could lease his farm orchard of something less than four acres. He stated he was a busy farmer and did not have time to care for the orchard even though he knew how. After considerable correspondence we arranged to use this orchard for a pruning and spraying demonstration. In one of the earlier letters from the farmer, he says, "The last two years the orchard has blossomed full and produced very few apples. This last season I got only about 25 bushels of very inferior apples." On November 2 he writes, "We have realized $525.00 from apples so far and have a lot to sell yet, so we consider that the project was sure a successful one." It cost approximately $25.00 to produce this result. The significant part of his letter, however, was contained in the remark, "I have not yet decided just what to get for next year's use."

Regardless of what our attitude towards this type of farm orchard is we are sure of one thing, that, like the poor, we will always have them with us. That they exert a marked effect upon our fruit industry can scarcely be denied. When you consider that the larger part of the fruit produced in Wisconsin and, I also believe, the larger part of the fruit marketed in the state comes from just such orchards as this, we cannot, ostrich-like, stick our heads in the sand of our personal opinion and thereby perform our greatest service to Wisconsin horticulture.

The incident I have recited is just one of many that come to our attention every year. The significant fact is that the farm orchardist is awakening to the fact that he should do something for his orchard. He frequently does not know what or how, but he is expressing an eagerness to learn and when he has once "been shown", he becomes another disciple to the slogan of "Better Wisconsin Fruit." Most of us can remember when it required much persuasion to even induce the commercial orchardist in this state to spray and we still experience some difficulty in getting some of them to follow the approved methods. It is to be expected that the task of getting the farm orchardist to spray will be much greater for his heart is supposedly set on cows or corn, not fruit. Never-the-less the signs of the times would seem to indicate that "the field is golden unto the harvest" for a campaign for better methods in the management of the farm orchard. You may say, go ahead; that is part of the business of the Horticultural Department. We have been going ahead as fast as the facilities which we are able to command have permitted but we can only scrape the surface of this job. Wisconsin is a large state, its farm orchards are numerous, the demands for help are many. If we are to accomplish the most possible at this opportune time, we will all have to lend a hand. You can do much in your community by setting a good example. That is especially true if you are not now doing it. If you are professing to spray and not doing a good job at it, a job which will give satisfactory returns, you are hindering, not aiding the development of the fruit industry of the state. If you are setting the right kind of an example, make your orchard a demonstration orchard. Be neighborly, invite in your friend who does not give his orchard proper care and diplomatically inoculate him with the "better fruit germ". It may take the infection quite a long time to show any results, but in the majority of cases it will produce them sooner or later.

Sometimes we are inclined to look out for No. 1 so much that we lose our persepctive and instead of helping, hinder ourselves. You may now have the only real good fruit coming into your market and therefore suffer little competition in marketing your product. Perhaps you are asking, Why should I encourage my neighbors to become my competitors in this class and thus make my problem of marketing more difficult? If you hold such views, it seems to me you are looking at the problem from the wrong angle. In the first place you suffer competition even though you have the only good fruit on the market. The poor quality stuff sets the market price, because it is the bulk of the fruit coming on the market. You may get a premium, but it is a premium over an unusually low price and probably not as high as if you were receiving no premium on a market set by good quality fruit.

An additional fact which should not be overlooked is that if a larger percentage of better fruit was available, the consumption and therefore the demand would increase.

What shall we do then as concerns this significant fact of an awakened sentiment for better management of the home orchard?

(Continued on page 94)

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A Chance to Serve.

Of the 1,600 members of the State Horticultural Society it is a fair guess that 1,000 are gardeners; some of them experts, but mostly just plain gardeners. Men and women who have "made garden" more or less for years. They know about how deep to plant seeds, that corn and peas may be planted two or three inches deep but beans and beets would never see daylight if planted more than an inch deep; they know how far apart to space cabbage and parsnips; know that a "hill" of cucumbers or beans does not mean a little hill or elevation built up of earth and the seeds planted on the top or under it but merely four or six or a dozen seeds grouped in one place and covered the proper depth instead of being planted singly in rows; in brief, they have the **garden sense.**

For these members there is now a splendid opportunity to **serve,** especially those who live in towns and cities.

Your society, through its officers, and in cooperation with the horticultural department of the University and the State Council of Defense, is heading the biggest garden driven ever undertaken in the state. Every available dollar of the Society's funds that can possibly be spared is being used to finance the work.

Several publications, brief bulletins on seeds, seed sowing, cultivation, garden plans, transplanting etc., will be printed and furnished to the heads of the garden movement in cities, and in fifty or more cities speakers will be sent to give help to beginners. This comprises two kinds of help, the printed word and word of mouth. In both ways those who need help can get it, but all of it is acquired while the snow is still on the ground, or at least before the garden begins to grow. The time when the gardener needs help most is in midsummer and then is the time when our one thousand garneders can serve. We want to extend our Advisory Council to cover every city and village in the state. Do you want to do something to help win the war? Don't miss this opportunity but write to the Secretary, State Horticultural Society, and offer your services.

Don't look on this as something trivial, a mere sentimental fancy of the editor, as events proved last year that Council members performed a very real service. Some, only a few, accepted the appointment and immediately forgot all about it but nearly all meant what they said and went out into the highways and byways looking for a chance to serve. And all of them found an opportunity to serve.

The ignorance and helplessness of the average beginner in gardening is vast and profound. You can help him over the rough places if you will. Invest in a postal card, address it as above across the back write, "Gardeners' Advisory Council: I Will" and sign your own name.

A Printer's Blunder

The article, "Not Bit, But Utmost," beginning on page 71 of January Wisconsin Horticulture and concluded on page 76, was wretchedly marred by the printer dropping a whole line of capital letters from the bottom of the column on page 71. The legend on the banner carried by the munition workers read: "DROP EVERY MORTAL THING AND SEND THEM PLENTY OF MUNITIONS." This makes sense; the maimed quotation as printed did not.

Unless looked after carefully, jardinieres make good coffins for house plants. Plants must have air at their roots as well as tops and will not stand wet roots or soggy soil. Keep the soil sweet and clean as well as the room in which the plant is kept. Plants need fresh pure air as well as people.

A State Wide Organization of Forces for War Garden Work.

Members of the State Horticultural Society will be gratified to learn that their society has taken the initiative in organizing the war garden movement throughout the state.

The declaration of war on April 9th, 1917, stirred the nation to action and horticulturists no less than others, but owing to the near approach of the gardening season there was no time for organization. Everybody pitched in and did their utmost, but in many, if not most places, the result was confusion and much duplication of effort. Everybody meant well and everybody worked hard but usually there was no organized effort. This year it will be different.

The State Horticultural Society has enlisted the aid of the State Council of Defense and this body will, through the County Councils, organize the various working forces in the cities. By way of information the plan as prepared at the request of the State Council is given below.

Members in cities are requested to take up this matter with their County Council of Defense rather than direct with this office.

ORGANIZATION OF FORCES FOR WAR GARDEN WORK IN CITIES OF 5,000 POPULATION AND OVER IN 1918.

Submitted to the State Council of Defense by The State Horticultural Society.

The State Horticultural Society as well as other agencies was active in promoting the war garden work in 1917, but the call for this extra effort came so late in the season that there was insufficient time for organization in the cities. This year there is no excuse available for any of us who are interested and want to help in this movement. Let's begin now, there is no time to waste.

In every city there is one or more of the following organizations, in some all of them and all eager to do something: Woman's Club; Commercial Club or Board of Commerce; Kiwanis Club; Rotary Club; Associated Charities and Boy Scouts in addition to church organizations, etc.

Usually all of these will be willing to work but it can be readily seen that these various forces should be organized in order to avoid duplication of effort.

Call a meeting at an early date of every one interested, for the purpose of effecting the following:

(1) To secure a sum of money: Sometimes a fund of $100.00 will be sufficient to finance the garden movement in a city of 20,000 or it may happen that $1,000 may be spent to advantage. There should be no need to furnish free seeds or plants or anything else wholly free.

(2) List all available lots and vacant land and as soon as possible list all who want gardens. Last year many lots lay idle when many people failed to make a garden for lack of land.

(3) If possible, and not too expensive, secure the services of some competent person to supervise the whole garden movement in your city, children's gardens as well as others, through April, May, June, and July at least. If the right person can be found, one who has both garden sense, some executive ability and tact, money paid for his services will be well expended.

(4) Plan for co-operative plowing. If A, B, C, D, and E, all living on one street each bargains independently for plowing a lot it may cost each one $1.50 or a total of $7.50 and may be done by five different teams. By means of a little planning one teamster can do all of this work at less than one-half the expense; in fact a man and a team can usually be hired by the day for $7.50.

(5) Plan for the growing of tomato, cabbage and other plants, good ones. The plants offered for sale at stores are usually crowded in boxes, stunted and almost worthless. This is because amateur gardeners have not known the need of better plants nor demanded them. Secure the services of some one who knows how to grow good plants and arrange to sell them at cost.

(6) Plan to secure the voluntary services of a good amateur gardener in every block if possible to give advice, aid and comfort to the beginner. Such persons can be found and as a rule are anxious to serve. Such helpers are facetiously termed "Block-heads" in some cities.

These six things should be done in every city and each city organization will find many other local needs to be met.

The State Horticultural Society and the Horticultural Department of the Agricultural College working together propose to furnish help to such cities as respond promptly to this appeal and to those only. Some of the things we propose to do are as follows:

The Horticultural Department of the Agricultural College and the State Horticultural Society, working together, offer our services to cities having an organization through which these departments can work.

We receive many requests for help from individuals and organizations acting independently and aim to supply all of them with the help asked for but much more effective work can be done if all of the forces in each city working toward this common end, more gardens, are organized under a common head. We can then communicate with each city through this central organization and arrange dates for lectures at a lessened expense and can more effectively distribute literature, etc.

Therefore, no applications for lectures and literature can be considered from cities having no organized war garden association until demands from organized cities have been met.

Publications: Bulletins will be published from time to time giving in compact form timely information on gardens and gardening written always for the beginner. The practiced gardener needs no help.

Two of these are now in preparation and will contain among other things lists of varieties best suited to small gardens and the quantity of seed of each necessary to plant a given area; other elementary facts concerning seeds and seed buying, and garden plans.

This information has been furnished by expert gardeners, amateur and professional and can be relied on.

Other circulars will follow on such subjects as:

(2) Selection of garden site; soils, etc.

(3) Plowing and spading; good and bad; manures.

(4) Garden plans; double cropping; succession crops.

(5) How to sow seeds, depth, distance apart, etc.

(6) Cultivation.

(7) Watering; transplanting.

(8) Insects.

(9) Diseases.

(10) Storing vegetables.

These will be printed in quantities sufficient to supply every one who asks for them.

We must, however, have some means of knowing approximately the number required and have a reasonable assurance that not more will be called for than will be used. To determine this will be the duty of the local organization.

Inspection: In addition to the plan of local district aid suggested in the city plan the State Horticultural Society will this year extend the membership of the Gardeners Advisory Council to include, if possible, every city in the state. This Council is composed of members of the society having garden knowledge who volunteer to answer questions personally or by telephone and when practical visit the gardens. This work was well received last year and gave excellent results.

These are some of the things that the horticultural forces aim to do but in order to get best results there must be local organizations through which they can work. Communicate with the Secretary of your County Council of Defense and urge immediate action.

Oh, Happy Day!

There has never been any lack of organization among the Door County fruit growers, rather there has been too much organization. Now after ten years of hanging apart, all the cherry growers have arranged to hang together. The following account from the Democrat of Sturgeon Bay, Jan. 4th, explains the situation.

At a meeting last Saturday afternoon of the fruit growers of both the Door County Fruit Exchange and Fruit Growers' Association, the Door County Fruit Growers' Union was formed with a capital stock of $15,000. The business and purpose of the organization will be to buy, sell, market and exchange, to hold for storage, and to dispose of all kinds of fruit and produce; to deal at wholesale and retail in any products and material used in the growing, packing and shipping of all kinds of fruit and produce, to acquire and hold real estate and fruit lands, to construct and maintain or to acquire and maintain, a canning factory for the canning of fruit, to do and perform any and all acts to promote the growing of fruit and produce within Door county.

The meeting was attended by fifty of the leading fruit growers of the county, and the constitution and by-laws of the new organization were read and after being thoroughly discussed were adopted unanimously. The company being capitalized for $15,000 it was necessary to have one-half of the stock subscribed, which was secured at the meeting, the large growers taking the bulk of the stock.

The board of directors of the new organization will consist of nine members, the seven members on the old Union board, who so successfully conducted the business for the two associations, were made members of the new board. The nine directors being as follows:

H. W. Ullsperger, A. W. Lawrence, M. B. Goff for a term of three years; D. E. Bingham, J. G. Martin and W. S. Reynolds for a term of two years; W. O. Brown, R. B. Cornish and Melvin Haines for a term of one year.

A. W. Lawrence was elected president, M. B. Goff vice-president, and Earl Johnson secretary and treasurer.

An auditing committee consist-

ing of Henry Ernhardt, C. M. Stephenson and John Boler was elected.

Forming of the Fruit Growers Union results in combining all of the fruit growers in one organization, where formerly they were divided into two different organizatons. The fruit business has developed to such an extent in Door county that it has great possibilities before it, among which is a canning proposition which is now under consideration by the officers of the new organization.

While the Union is incorporated to also deal in farm produce the fruit business will be its main object, and only those who grow fruit are entitled to membership.

All members shall market all fruit sold by them for the market through the association, and there will be no exception to this rule. A penalty has been attached to apply to those who violate this rule of the organization and it is the intention of the officers to strictly enforce it.

As the output of cherries alone last season was 117,000 crates and many of the orchards are not fully matured, another year or two will bring the crop up to where if all the cherries and other fruit are marketed through this one organization it will mean the handling of one of the largest business propositions in Door county.

The Sprinkling System for the Vegetable Garden.

G. C. Rasch, Burlington.

To begin with I am not a professional gardener, but I love to play in the dirt. I enjoy planting things. I take much comfort in seeing my plantings grow, and to appreciate this to the fullest extent, we must have the proper amount of moisture and at the right time so this brings us face to face with the sprinkling problem.

I will give you as briefly as possible my experience on "Sprinkling".

In order to produce the quick, luxuriant, tender growth of vegetables, we require water, and water enough at the proper time.

We have all heard much about irrigation. In many parts of the country irrigating is done by flooding the land and this method may do very well in arid localities, but these parts a system of over-head irrigation appeals to me as the most practical,—especially when it refers to Vegetable Gardens.

About six years ago I wrote the department of Agriculture at Washington for information on an over-head irrigating system, they referred me to the Skinner Company of Troy, Ohio, and after due consideration, I decided to install at Spring Brook Farms, the Skinner System of over-head irrigation, covering a patch of ground about 280 feet wide by 500 feet long.

The first step towards installing the system, was to make a plan of the ground I wanted to cover, giving slope, distance from source of water and a general outline, sent it to the manufacturers of the System and they at once advised how to proceed.

As the name indicates "Spring Brook Farms" we have a fine brook running through it, which never goes dry. I constructed a small dam across the brook giving me a small pond or reservoir of water about 200 feet from the garden plot. The main feed line is a four inch galvanized iron pipe laid underground deep enough not to interfere with cultivation. This main feed line contains a two inch connection every 56 feet holding a two inch upright; this now constitutes my connection for the lateral

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company

Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or samll quantities.

Wauwatosa, Wis.

pipe lines 250 feet in each direction from my feeders.

These lateral lines are graduated in size from about 1¼ inch at the feeder to ¾ inch at the extreme ends.

Each of these lateral lines has a small special nozzle every 4 feet the entire length.

These lateral lines are suspended about 8 feet above ground, from a galvanized wire cable. The cable of each lateral line is supported by 18 ft. two inch iron pipe posts, set in three feet of concrete 125 feet apart, the cable is anchored at each end and has turn buckles so it can be given the proper tension. These lateral lines are connected to the feeder uprights with a flexible union so the laterals may be rotated to give any desired angle to the nozzles, thereby controlling the distance of the spray. The advantage found in the overhead system is the noninterference with cultivation; my entire plot of 140,000 square feet has only twenty posts of two inch gaspipe, 56 feet by 125 feet apart.

I have four lines of laterals 500 feet long, 56 feet apart, and by rotating the laterals, I can cover 28 feet in each direction from the laterals, with finest kind of artificial rain. The power required for my system is an 8 horse power electric motor connected to a Centrifugal pump at the brook—pumping direct into the system. It can also be accomplished by a gravity tank, which requires pumping the water into it, but I prefer pumping direct.

All of these details as to the best method depends largely upon locations.

By making a plan of your garden be sure to have the rows run parallel with your laterals or sprinkler lines, so that if you have crops that do not require as much moisture as others, you can confine your spray on such rows or crops that need it more. You can pick strawberries on a portion of your patch, and as soon as you have picked a few rows you can follow with the sprinkler on the picked-over portion. The further advantage of the overhead system of irrigation over the flooding of the soil, or running water in trenches between the rows, is that you can work the soil almost immediately after sprinkling, which is impossible by the flood or trench system. This feature alone is worth much, besides you wash the foliage keeping it fresh and green, which is not accomplished by the flooding of the ground.

Now then you no doubt want to know the benefits derived in the way of crops etc. In this regard I wish to mention that I believe that crops can be doubled and trebled, by applying water in proper amount at the right time. When I first installed the system, I told my gardener to make a test on Melons; he planted a plot of about 250 feet square, one half the plot under the system and the other half out of the reach of it. The irrigated half plot netted $275.00 worth of uniform size fine flavored melons and the other half of the plot not irrigated, netted $47.00 worth of illshaped stunted melons of inferior flavor. In this particular test it showed a gain of about five to one in dollars and cents.

On Strawberries or any fruit that needs water just at the right time it insures the crop, generally speaking, *it can be termed crop insurance.*

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year
Kellogg's Nurseries
Box 77, Janesville, Wis.

Help Wanted
Reliable young men for farm and garden work. Will hire by the month or for the year. Write
Rasmussen's Fruit Farm
Oshkosh, Wis.

GLADIOLUS
(The People's Orchid)
Our bulbs are all our own grown.
Price list covering only choice varieties Gladiolus and Peonies sent on application. We make good anything sent out not as represented.
Lincoln Gardens
EAU CLARE, WIS.

After heavy snow storms it is a good plan to shake the snow from evergreen branches. Too much snow is likely to cause them to break down.

Let us not give up the culture of flowers this year entirely, but give increased attention to growing good gardens.

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Rye Hoe-Cakes

The legend of rye hoe-cakes still lingers in hoe-cake country. These crisp cakes are served like the English toasted muffins—that is split, buttered and spread with marmalade. Rye hoe-cakes may be the Scotch representative of this tea room specialty, or they may be a survival of the famous cakes that King Alfred allowed to burn while he dreamed of battle.

Rye hoe-cakes are made from a three to one rye and wheat flour biscuit dough. Roll very thin and bake on the iron griddle or "hoe". And by-the-way the "hoe" is the stove lid and not the chopping hoe. Brown slowly on both sides, pile up where they will keep hot, and send to the table when you have an ample stack—it takes a whole rye stack to go around.

Plants that are inclined to mildew may be dusted with liver of sulphur. The best plan, however, is to remove the cause of mildew, which may be a draught of air or moisture conditions.

HARDY OLD FASHIONED PLANTS

OUR SPECIALTY

The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices

WILLIAM TOOLE & SON

Hardy Plant and Pansy Farm Baraboo, Wis.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

The Kickapoo Valley WISCONSIN'S FAVORED FRUIT DISTRICT

Our Specialty: Planting and Developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

A Worth While Garden

Stories about big gardens or big stories about little gardens are always interesting and sometimes helpful. Usually on investigation it is found that the 24 dollar garden was produced at a cost of about $117.83 plus gasoline. Many of the successful (?) amateur gardeners of 1917 made the trips between home and garden in a three or five thousand dollar automobile.

The following, however, seems to be a horse of another color. Mrs Strong of West Allis secured these figures from Mrs. Stolte, who made the garden and declares that there was no horse or automobile or even a street car connected with it; that Mrs. Stolte was a busy woman aside from gardening; that she walked a long distance to the garden; that green lice and other pests were very bad; that the soil was only fairly good and not well prepared and that there was no joy but only grief until,—the plants began to grow.

Report on planting of a lot 60x120 by Mrs. R. E. Stolte. Wauwatosa, Wisconsin. Soil; fairly good:

Name	Cost of seed	Planted	Amount	Returns	Valued	Remarks
Onions, large red Wethersfield	$0.25	April 14	1 oz	4 bushels	$6.00	
Prizetaker	.50	May 5	2 oz.			
Radishes	.05	April 14	1 pkg.	10 bunch's	.25	
Beets, extra early Egyptian	.10	"	1 pkg	¾ pushel	.85	
Parsnips	.15	"	1 pkg.	½ "	.50	
Peas, Dreer's American Wonder	.20	"	1 pint	3 pecks	1.80	
Lettuce	.05	"	1 pkg.	2 doz. hds.	.60	
Early beans	.30	May 5	1 pint	1½ bushel	3.00	
Peas	.20	"	1 pint	2 pecks	1.20	
Carrots	.10	"	1 oz.	2 bushels	1.60	
Beets, Detroit dark red	.10	"	1 oz.	½ "	.50	
Radishes	.05	"	1 pkg.	8 bunches	.20	
Kohlrabi	.05	"	1 pkg.	4 doz.	.60	
Potatoes, early rose	2.00	May 19	2 pecks	2 bushels	3.00	failure on acct.
" western	4.00	June 2	4 pecks	2 "	3.00	of green lice
Beans, Dreer's stringless	.70	"	2 pints	4 "	8.00	
Early corn, Blue Mexican	.10	"		8 doz.	1.40	
Tomatoes		"		2 bushels	3.00	
Peas, telephone	.30	June 16	1 pint	3 pecks	1.50	
Cucumbers	.10	"	2 pkgs			green lice
Sugar melons	.25	"	1 pkg.			
Evergreen corn	.25	"	½ pint	10 doz.	1.35	
Golden Bantam corn	.25	"	½ pint	14 doz	2.10	
Lima beans	.60	"	2 pints	1 quart	.20	summer to dry
Pole beans	.30	"	1 pint	½ bushel	1.00	
Peas, eatable pods	.30	July 7	1 pint	3 pecks	1.50	
Beans, wax stringless	.70	"	2 pints	5 bushels	9 00	
Cabbage, plants	1.20				1.50	
	$13.25				$53.65	
				Net....	$40.40	

(Continued from page 87)

Shall we encourage or discourage it? Shall we say to our friend of the letter, "Your type of orchard is an injury to yourself and the fruit industry. You had better cut it down." Or shall we say, "Your orchard under your awakened interest in better management may do its part in a greater and better fruit industry in Wisconsin?"

A dry house atmosphere is not desirable to live in and it will not permit the raising of good house plants. Plants must not be kept too dry or warm. Fresh air is essential to them as well as to human beings.

Orchard trees may be pruned on warm days in late winter if the snow is not too deep.

McKAY NURSERY COMPANY
MADISON, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

Free!

A 50-gallon barrel of Scalecide free to any any one who will suggest a *fairer* guarantee than that given below.

"SCALECIDE"

As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity:
Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE", and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECIDE".
Send for new free booklet, "Profits in Fall Spraying".

B. G. Pratt Co., M'f'g Chemists
50 Church St. Dept. XI New York

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON
SHEBOYGAN, WISCONSIN

ASK QUESTIONS

Members are privileged to ask questions. Tear out this sheet, send to Secretary State Horticultural Society, Madison, with not more than 10 questions. Answers will be published in succeeding issues of Wisconsin Horticulture. Don't ask questions for the sake of asking, but don't fail to ask if you really want to know. No questions will be answered unless name and address of writer are given. No names will be published without consent of writer.

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Cranberry News

By Mrs. S. N. Whittlesey, Secretary Wis. State Cranberry Growers' Association

The 31st annual meeting of the Wisconsin State Cranberry Growers' Association convened in Grand Rapids, Wis., Jan. 8, 1918. Owing to bad weather and congested conditions of railroads caused by high wind and heavy snowfall, arrivals were tardy and many were not able to come at all. After a long (in time) and very roundabout trip from Chicago, President Searls was able to reach us and called the meeting to order at 10:00 a. m. Also on account of time consumed in this trip, Mr. Searls was not able to give us his usually prepared address but gave a talk dwelling principally on the Black head fire worm—a pest that now threatens great destruction unless stringent measures are taken in proper time.

The minutes of the 30th summer meeting were read and approved, as were reports of Treasurer and Secretary. The two latter not differing greatly from those of a year ago. Owing to uncertainty of liabilities from destruction of records last February, it was deemed best to be sure of same before making inroads on assets in evidence. These will now be taken care of and the results published in our 31st Annual report. By unanimous vote of the house, the Secretary was instructed to cast a ballot for the old officers, namely: Andrew Searls, President; F. J. Hoffman, Vice President; H. J. Gehbardt, Treasurer, J. J. Emmerick, member Ex. Com.; and Mrs. S. N. Whittlesey, Secretary, for the ensuing term.

The entire morning session was devoted to business and reports, the discussions from which ought to prove fruitful.

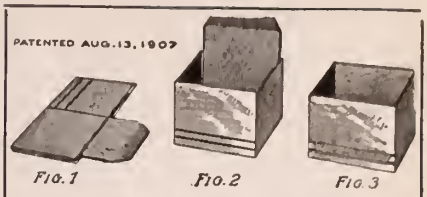
A number of valuable papers were given in the afternoon, noticeably "Co-operation Between Banker and Grower" by Guy O. Babcock of the Wood Co. Nat'l Bank. "Observations and Suggestions" by A. N. Chaney, general manager American Cranberry Exchange. "Shall We Advertise?" by Herman J. Gebhardt, Treasurer W. S. C. G. Ass'n. "Value of State Fair Exhibit" by Chas. Schlosser, Chicago manager Wis. Cranberry Sales Co., "Marketing" by S. N. Whittlesey and "The State Fair" by Chelcie Treat.

The only drawback to this interesting meeting was the absence of many members whose presence we enjoy and whose help and co-operation we need.

Farmers Want to Share in Responsibility of Winning the War

It is unwise to deny one-third of the people of the United States any real part in handling the problems of the war. The farmers are constantly told that the war will be won by the food they supply. Yet the farmers of America have today little voice, if any, in deciding the great questions, even the food and farm questions, upon which the issue of the war depends. So far as we have learned there is not a single genuine farmer, representative of the organized farmers of America, in any position of authority in the Food Administration, the Advisory Council of National Defense, or any of the other special boards charged with the conduct of the war. When contrasted with the recognition properly accorded to organized labor and the vast possibilities entrusted to the representatives of organized business, such treatment amounts to notice to the organized farmers that their partnership is not desired.

Sustained or increased production is impossible unless the organized farmers of America are given a voice in the conduct of the war commensurate with the importance of their part in winning it.



BERRY BOXES

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WRITE FOR CIRCULARS AND INFORMATION

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, March, 1918 | Number 7

A tree, undoubtedly, is one of the most beautiful objects in nature. Airy and delicate in its youth, luxuriant and majestic in its prime, venerable and picturesque in its old age, it constitutes in its various forms, the greatest charm and beauty of the earth in all countries.—*Downing.*

Roses for Cut Flowers.

Rose lovers who heretofore have confined their attention to general-purpose roses, cutting their house flowers from plants used for lawn or border ornamentation, or for covers for arbors, should find it desirable to plant a special rose garden for cut flowers. This is practically the only plan that will result in the production of blossoms of highest quality. The hybrid perpetuals are the hardiest of the cut-flower roses and are the only ones to be relied upon in the colder parts of the country and in the rural districts of the dry-land region. They usually bloom only in the early summer, but sometimes bloom a second time if thoroughly pruned, especially if given a midsummer check by dry weather.

Choice of Stock

Roses adapted to culture for cut flowers, the gardener will find, show most plainly the results of the long period through which roses have been selected and bred. Greater specialization in methods of treatment also will be found here than among other types of flowers. Plants may be had from nurseries in "own root" "budded," or "grafted" form.

The advantage of grafted and budded roses is that they are more vigorous the first few years, but they have to be watched closely to prevent shoots starting from the stock, as such shoots take the sap and thus starve the scion. The expert who constantly can watch his plants may be successful with grafted and budded roses, but the average grower would do best to use own-rooted plants, even though they do not grow so fast. The few varieties that succeed only when grafted should not be tried until the grower has become expert in handling roses. Climbing roses are grafted less often than hybrid perpetuals, hybrid teas, and teas. The size or age of the plant to use is largely a matter of choice. They are offered in various sizes, from 1 to 3 years. The plants from cuttings are smaller than the other plants of the same age and variety. Three-year-old plants give the quickest results. Two-year-old plants can be transplanted more successfully than older ones and are rather more satisfactory. One year old plants have to be grown for a year before any real results are obtained in the way of bloom. The first year the flower buds should be picked from this small size as soon as formed, to let all the strength go into growth.

Soil, Drainage and Fertilizer

Cut-flower roses thrive in a well drained soil that is not too dry and is well supplied with organic matter. The hybrid perpetuals succeed best in clay loam or in a soil with a clay subsoil. They do not succeed so well in gravel soils. A well-enriched soil and one reasonably constant in its ability to supply the plant with moisture is the chief requirement. On the other hand, it must be well drained, as roses will not grow when water stands about their roots.

In heavy clay soils or wherever water is liable to stand, it is desirable to provide artificial drainage. This is best done by excavating to a depth of 3 feet, placing a 12-inch layer of stones in the bottom, covering these with the inverted sods, and then refilling the bed with well-prepared soil. This layer of drainage should be connected with some proper outlet for carrying off the water. A drain of a similar layer of stones 1 foot or more wide, or a tile, should lead to some main drain, a sewer, or to an opening on lower land, so that surplus water will be carried away immediately. In well-drained soils such special precaution is not necessary. Sometimes the layer of stones without the outlet drain will be sufficient.

The recommendations already made about manures and fertilizers are equally applicable to cut-flower roses. The use of rotted cow manure or well-prepared compost is even more important for cut-flower roses than for border roses.

The Care of Lawns.

Home owners who wish to get the best results from their lawns should begin to work on them the last of February or early in March, according to the lawn specialists of the United States Department of Agriculture. Too many people delay giving any attention to their grass plots until the weather becomes warm and thus lose an opportunity to take advantage of melting snow and the alternate night freezing and thawing of the ground.

If the lawn has not already been fertilized, some form of commercial fertilizer should be used at once. Manure applied this late will not be effective in most cases. Ground bone is probably the best fertilizer to use, although tankage and fish scraps, some of which, however, have an unpleasant smell, also give good results. Prepared sheep manure is an excellent fertilizer for use at this sea-

son. Cottonseed meal where obtainable at a low enough price may be used to advantage. In connection with those fertilizers, however, it is desirable to use some wood ashes or other fertilizer containing potash. As fertilizers with this element are unusually high priced this year, the natural inclination will be to use minimum quantities. With soils that have been well fertilized in the past, failure to use a normal amount of potash will probably not affect the lawn badly in one season. These fertilizers should be applied at the earliest possible moment.

Temptation to get on the lawn and clean it up is strong as soon as the snow is gone and the weather begins to settle. Impatience, however, should be curbed until the ground is settled fairly well so that footmarks will not show in the turf. Where a lawn has been trampled down during the winter or played upon when it was soft in winter or early spring, the owner should take steps to compact its surface at the earliest possible moment. This compacting, however, should not be done until all trash has been removed. As soon as the ground is sufficiently settled so that a rake does not dig into the turf, the owner should rake it gently with a wooden-toothed rake. Frequently, however, all that is necessary is to pick off the litter. If a lawn has been covered with manure in the fall, it will be necessary to break the manure up with a rake in the spring, and remove some of the coarser portions. A wooden rake is best for this purpose, as it will leave so much more of the fine material upon the ground.

Do not rake off so much of the manure that the lawn will have a thoroughly clean appearance. All of the fine manure that the summer growth of grass can possibly hide should be left. It is surprising how much litter the grass will obscure in a lawn, as one or two heavy rains will beat down a quantity of such material.

Before freezing weather is entirely over, fresh grass seed should be sown, for it must be remembered that only by repeated applications of grass seed can a good lawn be produced. The ordinary seeding of grass on a new lawn is 1 pound of seed to every 400 square feet—that is, to a piece 20 feet square. For reseeding a lawn, one-tenth to one-half of this amount should be used, according to the condition of the lawn at the time. For the northern part of the United States, Kentucky blue grass and redtop are the standard varieties. However, where there are many bare spaces it will be found well to use some white clover. About one-tenth the quantity of clover as of the other grasses mentioned will be required.

Probably as good a time as any to apply grass seed will be some morning when the ground is frozen, so that when the ground thaws during the middle of the day the sown seed will be covered sufficiently to germinate well. The most successful seeding is that done while the ground is freezing a little each night and thawing again in the day time. Many people have success in sowing grass seed upon a light snowfall at a time when the snow is likely soon to melt. With either of these methods, however, there is danger that birds will eat some of the seeds before it is covered in the soil. In spite of this, however, there is a better chance of getting a good lawn by these methods than when the seed is sown on land that will not quickly cover it.

The last operation in the preliminary spring care of a lawn is to give it a good rolling. This rolling, which should be done with as heavy a roller as can be handled, should not be begun, however, until after the lawn is dry enough so that the roller passes over it without sinking at any point below the general level. If the land is too wet the roller will leave depressions. This rolling should be done just as soon as the land is dry enough to permit it, as rolling compacts the soil about the roots of the plants, brings them into closer contact with the soil, and gives them a better opportunity to make a quick start as soon as weather conditions are favorable.

Grass cutting should begin just as soon as the lawn mower can get a good hold. The very early cutting may be made with the lawn mower set close to the ground. As soon as the growth of grass becomes a little less vigorous, the mower should be set just as high as possible. This high cutting should be done as frequently as though the grass were being cut shorter.

This is the time to study spraying. Spraying is serious business and the spraying campaign should be well worked out in advance. Know first what insects or diseases you are going to combat, then get the best materials to meet them and learn when and how best to apply them.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

To the Members of the Wisconsin State Cranberry Growers' Association:

Through the courtesy of Secretary Cranefield in tendering a generous amount of space in the Wisconsin Horticulture for cranberry news, the growers have an unusual opportunity to ask questions—to exchange opinions at frequent intervals, and impart information along the many lines connected with our industry. While the secretary was appointed to take charge of this cranberry corner, it was the understanding the members would furnish the material. The benefit derived will depend largely on your individual efforts in giving of your knowledge and experience. Without further invitation or notice please feel these columns are open for your use.

Of late years Pres. Searls has had phenomenal success in raising good crops. He is ever willing to help and has told us this month his first work in the spring toward insuring this success. Mr. Searls also writes—"There has been some fearful butchering of innocent plants under the disguise of pruning" and suggests a paper on this topic by Mr. Whittlesey whom he thinks "has this down to a science."

Mrs. S. N. Whittlesey, Sec.

Water for the Winter Protection of Cranberries.

Andrew Searls.

The time is near at hand when I think it should be taken off, so I will give you my conclusions. When I first took a hand in trying to cultivate the cranberry, it was the custom to retain the winter flood until the first of June, keeping everythin under a deep covering of water. The reason given by growers at that time was to hold back, or keep the vines from growing and being killed by the late frosts in the spring; so of course I did likewise for some years. Then I became skeptical regarding the wisdom of this practice. Upon close observation I noticed the wild vines growing in our vicinity bore much heavier crops of berries when they escaped the late frostes of spring and the winter winds and cold, having been protected by the winter snows—than did our vines which had been blessed by our method of protection. I also noticed the wild vines were not inclined to grow until late in May in a normal season.

Then why keep our vines under water so late in the season? The cold nights of April and early May seemed to do the wild vines no harm, as they had not made any new growth. I observed our vines that had been protected until the first of June would blossom and seemed to promise an immense crop of berries, but when the crop of young berries should have shown up, a very large portion had blashed.

About that time we had a very dry spring and we were unable to keep our vines under water, in fact the most of the vines were exposed, there only being a few inches of water on the ground. In season our vines blossomed fine and when the season advanced showed nearly every blossom had produced a berry showing a very marked improvement over any previous season. About this time we had one of our dikes give way in April exposing a small field and we were able to hold sufficient water to give protection to the vines when the new growth took place the latter part of May. This field showed a very marked improvement over the other fields in the crop yield, being almost entirely free from blight. I then revised this water question in about this fashion. Put on a winter flood when the vines need protection, and that is usually late in November, and take it off as soon as winter is past.

My usual orders to the caretakers of the marshes I am interested in is—get your flume boards out of your flumes before the snow and ice begins to melt in March, and allow the water to escape as it melts, allowing the water to drain entirely out of the ditches. In this way any frost that may be in the bog, will not draw out readily, as it will on upland, and will usually hold back any vine growth unless we have a very warm April, and it must be unusually warm when a bog is well drained, to cause any movement of life in the vines. Should this be the case, it is, of course, necessary to again flood up and hold them back, as it is not wise to allow the vines to get under way in April or early May. My opinion is, the late holding of water on a bog weakens the vitality of the vine, causing blight of the young berries.

Personal Items.

Early in December, 1917, Roy M. Potter, one of our youngest cranberry growers and Sales Co. inspector, enlisted as a truck driver. After three weeks at Jefferson Barracks, Mo., he was sent to Kelly Field, Texas. Here the boys were put to digging ditches —not new work for him as that was the last work he did at home. He writes "the boys have a little song that goes like this—I am not an aviator, nor an aviator's son, but will handle pick and shovel, till the aviators come." He is glad he is not raising cranberries in Texas where the days are awfully warm and the nights very cold. Roy was one of sixty chosen out of twelve hundred to take up Liberty Motor work, and is now spending six hours a day studying at Dunwoody Institute, Minneapolis, Minn.

Mr. Earle Pease, V. Pres. of 1st Natl. Bank of Grand Rapids, is avoiding some of our extremely cold weather by spending a few weeks with Mrs. Pease who is at Lake Worth, Florida, for the winter.

We are pleased to notice a winter visit of Henry H. Gebhardt of Black River Falls. His trip extended east to Pennsylvania and was a very pleasant one.

As is the usual custom of Mr. and Mrs. Robert Skeel they are spending part of the winter with the latter's parents at Waupaca, Wis.

Pres. and Mrs. Searls and daughter, Miss Mayme, are visitors at Beaver Dam for a short time.

Mr. and Mrs. H. B. Tuttle will make their home another year at the E. K. Tuttle marsh near Valley Junction.

Mr. and Mrs. B. P. Clinton of Cranmoor are enjoying the winter at the home of their daughter, Mrs. Young, in Hydro, Oklahoma.

Mr. J. B. Arpin of the Arpin Cranberry Co., has been south to the Gulf states looking after his dredging interests. Mrs. Arpin and their son, Leon, accompanying him. Leon decided to remain through the summer.

Mrs. S. A. Warner, formerly of Warrens, Wis., but now of Harris, Iowa, was called to the home of her brother, Robert Regin, at Cranmoor to help care for her mother, Mrs. Daniel Regin, Sr., who has been a sufferer many months.

Pruning.

That position of the upright of the cranberry vine most favorable to the formation of the terminal fruit bud and especially to the development of that bud into a good crop of cranberries seems to be a position nearly perpendicular and as independent and untrammeld of its fellows as possible.

The object of pruning is to get the vines into that most favorable position, which is also most favorable for gathering the crop with the rake or scoop. The tools are a common wooden-toothed hand hay rake and a similar rake or pruner with about four steel teeth instead of a dozen wooden ones, and these four are sharp edged, slightly hooked, short knives.

The method is first to use the hay rake to comb out the vines, straighten and even up what is twisted or trodden down, and to remove rake ends and rubbish and to discover superfluous runners and useless long vines that grow high among the uprights. Next use the pruner to cut out the superfluous long vines, carrying the tool lightly and evenly thru the uprights (not dragging it) high among the tops, twitching the tool with quick stroke to right and to left, the operator moving backwards, the operation and the wad of vines following him—doing a strip say five feet wide and as long as he can remember, say thirty feet, then another strip and so on. We always comb, prune, and rake from west to east—the nap of the vines seems to demand it. The operator should keep his pruner sharp, and his wits. It is not profitable to cut out roots, nor uprights.

Pruning is best done after picking in the fall, and may be done in the spring before sap starts in the vines.

S. N. Whittlesey.

Bulletins of the War Garden Series.

Two circulars or bulletins of the War Garden Series announced in the February number, have been published and are ready for distribution, Getting Ready for the War Garden, by Prof. J. G. Moore and Seed Sense, edited by F. Cranefield. Both are reprinted in this number. Copies may be had on application to this office or to the College of Agriculture. We want every one who will plant a garden this year to have a copy of these as well as the ones now in preparation. Ask for exactly the number you can distribute to good advantage—no more, no less.

THE TREE THAT FOUGHT FOR FRANCE

By EDWARD W. FRENTZ

One hot September day in the fall of 1915 a little boy lay quietly on his back, looking up through the branches of a great big tree that lavished its protecting shade above him. He was thinking of the tree, and of all that it had seen, and of what it could tell if only its whispering leaves could talk; for he had heard a part of the story many times, and he wished that he could hear the tree tell the whole of it.

It was his great-grandfather, Philip Le Blanc, and his great-grandmother who had come there first, so long ago that there were no houses and no other people anywhere near. When they saw the tree, which even then was greater than any round it, and when they had drunk of the spring that watered its roots, his great-grandmother had said, "Here let us stay;" and so they unyoked the oxen from the great wagon and began to make a home in the Ohio wilderness. But all that first summer the tree was their real home, for under it they cooked and ate their meals, and under it they slept when the nights were hot.

And by and by, even before they had finished the log cabin on the little knoll to the east, a son was born to them; and him, too, they called Philip; and his father said when he named him, "I have little to give thee, my son; but what God gave to me, that give I also to thee. Thou shalt have the great tree that has sheltered us in the wilderness, and that was thy first home. It shall be thine forever."

And so the tree came very early to be known as "Philip's tree."

The second Philip, who was the little boy's grandfather, had spent his life in making the forests into fields and in planting corn and wheat, and he, too, had a son whom he named Philip; and when he christened him he said, "My son, I have much to give thee, but nothing else so beautiful as the great tree that I had of my father. That, then, shall be your christening gift." And so the tree was still called "Philip's tree"; but this time the Philip that was meant was the little boy's father.

Those things, of course, the little boy could not remember, for they happened long before he was born; but what he did remember was the day when his father had first told him the story of the tree and at the end had said, "And now, my son, as my grandfather, the first Philip Le Blanc, gave the tree to my father, so I, the third in line, and the third to bear the name, now give it to you, for your very own, to love and cherish as we have loved and cherished it."

All those things the little boy thought of as he lay there and watched the sunlight dotting the leaves with gold. "And it is now *my* tree," he said happily to himself; "my very own!"

He thought that he had spoken only to himself, and so he was startled to hear a little rustle in the grass and a man's voice saying,

"Yours, is it, my son? Then you are a lucky boy, for there are few like it now." Then the stranger asked where the little boy's father was, and went over to the house to see him.

Philip saw him go in at the front door, and after a little while come out again, but this time Philip's father was with him. The two of them crossed the dooryard and the road, and came over to where Philip was sitting. "There!" said Philip's father. "Ask him yourself." And he smiled.

Then the stranger said, "My boy, who owns this tree?"

Philip rose to his feet, for, although he could not tell why, it seemed as if something great were at hand—something in the presence of which it was not fitting to remain seated. So he stood up straight before the man and said, "I own it, sir."

"And will you sell it—to me—for a great deal of money—for a hundred dollars?"

For a moment Philip looked at the man in wonder. "Sell it?" he said. "Sell my tree? No, sir."

Then the stranger turned to Philip's father. "May I tell him the story?" he asked.

"Yes, tell him. Tell him as you told me; for the tree is his, and he shall decide for himself."

And so, as they sat there under the tree, the stranger told the little boy of the great war; of how French men had been killed and French women had been driven from their homes and little French children were starving. He spoke of the many things that France needed and could get only in this country; and then he rose and, laying his hand on the trunk of the tree, he said, "She needs your tree. She needs it for gunstocks, for it is a black walnut, and so large that it will make hundreds of stocks, and of no other wood can

good stocks be made. It is a noble tree. It has been in your family for generations—I know the story—and it is like an old and dear friend. But your people and your father's people came from France many years ago to help this country when it was poor, and the land has blessed them and made them rich. Now France needs your help—she needs your tree. Will you sell it to me—to fight for France?"

The little boy looked with wide, startled eyes at his father. "Is it true, father, what the man says?"

"Yes, my son, it is all true."

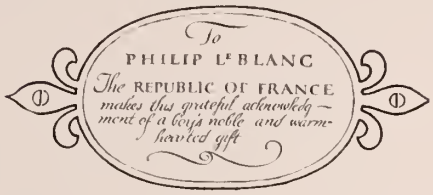
Philip turned to the stranger. "Then you may have my tree," he said. "But I will not sell it to you; I will give it—to France."

"Will you let him do it?" asked the man of Philip's father.

"It is his, and he has done as he wished," said his father, and laid his hand on Philip's head; then he and the man walked away together.

In a week workmen came with saws and axes and laid the great tree low. Then they brought a little mill and cut the log into blocks and the blocks into slices and the slices into strips, and loaded them on trucks and hauled them away. And the place where the tree had stood was lonesome and bare. But as Philip thought of the strips of wood that the trucks had hauled away, it seemed to him that every one of them was a tough little brown soldier gone to fight for France.

I do not know who told the story, or how it got across the sea, but a little more than a year afterwards there came to Philip a big wooden box with strange, foreign-looking labels on it; and within was a case of polished walnut that held a wonderfully beautiful rifle. The metal parts were richly engraved, and the stock was of that lovely curly wood that comes only from the part of the tree where the trunk joins the roots; and set into the stock was a plate of gold on which was engraved:



Never again will the birds sing in the branches of the old walnut, but in a boy's heart will sing throughout all his life voices sweeter than those of bird or flute, for they are the voices of patriotism and sacrifice and service.

Reprinted from the Youth's Companion, Boston. Copyrighted 1918 by Perry Mason Company, Boston.

Apple Activity in Iowa

In its campaign to increase fruit production as a contribution to the nation's stock of food, the Iowa State Horticultural Society points out the high percentage of sugar in ripe apples. At the request of the society, Professor C. N. Kinney of Drake University has furnished striking figures supplementary to resolutions passed at the last meeting urging extensive fruit-growing activity.

According to Professor Kinney, the best grade of ripe apples runs from 15 to 18 per cent in food value, mainly sugar; thus in 12 ears of apples there would be something like two ears of sugar and other food constituents. If 1,500,000 bushels of apples going to waste annually in Iowa could be saved, there would be conserved some 12,000,000 pounds of sugar and food constituents.

In calling attention to these figures, the Iowa State Horticultural Society hopes to overcome the popular impression that apples are merely a tonic or relish used for dessert and show that on the contrary they are a valuable food product.

California Returns Gift

Five and one-half million pounds of seed beans and 1,500,000 two-year-old French prune trees are being gathered in California for shipment to Northern France to rehabilitate the fields and orchards devastated by the Germans in their retreat.

The beans are pink and black-eye varieties, and the quantity is sufficient to plant 69,000 acres. The prune trees will convert 15,000 acres into bearing orchards within two years.

There is a bit of sentiment in California's sending young orchards to France, as it was this war-torn republic that gave the state its first prune trees. This was in 1856, and since that time the prune orchards cover nearly 100,000 acres and bring to the growers more than $10,000,000 a year.

If an average crop is raised from the California seed it will mean an addition to the food supply of France of more than two and one-half pounds of beans next summer to each of the 40,000,000 residents. Shipments will begin immediately after the new year.—Philadelphia Record.

Go over the celery, cabbage and root crops in the cellar and pick out any that are starting to decay.

Wisconsin Horticulture

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Keeping the Faith

The Youths Companion of Boston has been published for nearly a century and still maintains a high standard of exeellence. The writer has had the great privilege of being a constant reader of the Companion for thirty-seven years and enjoys it now quite as much as in the beginning. It is **clean** from cover to cover. Its fiction possesses high literary merit, is never morbid, but always inspirational.

Two reasons have inspired this unsolicited tribute: a deep, heartfelt appreciation of what I believe this periodical has done for the youth of our country and to call attention to the beautiful little story taken from the Children's page of the Companion and printed elsewhere in this issue. I want to believe and do believe it is truth and not fiction.

F. Cranefield.

The Business of Winning.

It is time that we began to think in concrete personal terms about the business of winning the war. To a good many people in America that has been and still is somebody's else business.

The President can't win this war. The Democratic Party can't win it. Neither can the Army nor the Navy, nor the farmers, nor the laborers, nor the capitalists. You, whoever you are and whatever you are doing, must win it personally. The business of winning is everybody's business. Any man who is not ready to make it his personal affair is a coward running from the field of battle.

From this time on there can be only three classes in the United States—Americans, pro-Germans and yellow dogs. Many people would lump the two last, but wrongly, because in the third group there are many who, once awakened to a class consciousness of their yellow dogginess, may be saved. We refer, of course, to the men who are seeking party and partisan advantage in this crisis; to the red-tapers and incompetents who are obstructing and muddling everything they touch; to the grandstanders and limelighters who see nothing but an opportunity for personal advertising and aggrandizement in the national peril; and to the profiteers, to whom all dollars look alike, even those that are blood-stained.

Let there be no misunderstanding in the mind of any man about these things. Votes made now by specious appeals to discontent mean lives lost. Incompetents continued in office mean trenches taken by the enemy. Strikes that squeeze the last penny out of our need for haste mean men drowning in the Atlantic and soldiers sacrificed in France.

The yellow dogs are in a minority. They must be converted or sent to the pound. The pro-Germans should be there now. The great silent majority of us who are single-hearted for America cannot be soldiers, but every man and woman of us can back up a soldier to the limit.

—Saturday Evening Post.

'Whispering Traitors' Denounced by Taft.

Chicago—"Whispering traitors," said ex-President Taft before the national service congress, "have been the centers throughout the country of discontent. In little communities you will find that the presence of two or three who have suggested reasons why we ought not to have gone into the war, why we did wrong to Germany in this, why we did wrong to her in that—should have kept us out of the war, and that has a paralyzing effect upon the enthusiasm of our people. It takes the fine edge off patriotism among those to whom these suggestions are rendered.

"The time is coming, my friends—we might as well face it—the time is coming when we may

meet disaster, when this devilish malignity of the Germans shall make them suggest a trap for fools among us by which an inconclusive peace is to be brought about—that we shall have to call on the strength and pride of our people to stand up against any such lure and have the Germans know that they cannot lead a moral people like us to give up a moral fight like this."

A Letter and an Answer.

Dear Sir: The farmers in this section nearly all have some apple trees but realize very little from apples. About 85% of Duchess, McMahan, Wealthy, etc., are left to rot on the ground. There are very few that spray the trees, as they claim it does not pay to bother with apples at the price offered for them. Would a plant for evaporating apples pay, and what would you estimate the cost ofsuch a plant? I have an orchard of 1,100 trees that will come in bearing soon. About 80% of my trees are Wealthy.

M. O.,
Vernon Co.

I have your interesting letter of Feb. 16th, but will admit that I have no ready solution for the problem you propose. For 25 years I have pleaded with the farmers of Wisconsin to take better care of their orchards. Many others connected with the Agricultural College have done the same thing, but we have met with poor success.

The farmers of Wisconsin do not take care of their orchards, and I doubt if they ever will. **Of course** the apples rot on the ground. How can it be otherwise? In the first place less than one-half of them are fit for market. There are too many good apples for the buyer to bother with wormy and scabby ones. Even if the farmer should properly care for his trees so as to have clean, marketable fruit he would still be handicapped because he is not equipped for marketing. His crop is so small and of so many different kinds that he would find difficulty in disposing of it in the wholesale market to say nothing of buying barrels and learning the art of packing, and the local market as a rule is easily glutted.

If you ask me the answer of this problem I will reply that I have none to offer unless it is this; if the farmers of any community will cultivate their orchards, prune the trees and spray them, giving the same attention to their apple trees that they do to their corn crop and will then co-operate in packing and shipping, they can dispose of their crops profitably. If they are unwilling to do this they should dig out their orchards except a dozen or two dozen trees from which they can take what they get from year to year for home use. My hobby is that the fruit in Wisconsin should be grown by **fruit growers,** specialists, who will give proper attention to their trees. You would easily fall within this class as you have 1,100 trees. I think, however, that you have a disproportionate amount of Wealthy, 80%. You have too many eggs in one basket. However, I am sure you will find no difficulty in disposing of your crop to advantage.

We are investigating the evaporating business and hope to have something interesting to offer soon. Sec. W. S. H. S.

About Garden Peas.

Smooth peas may be safely planted earlier than wrinkled peas.

Of the wrinkled varieties some are hardier than others and may be planted earlier. The Alaska is the hardiest of all the kinds commonly sold, Gradus next, and Laxton third.

The late pea, Stratagem, is the best all around variety, is half-high and does not require support. Champion of England is better quality than Stratagem but requires support.

N. A. Rasmussen.

Much can they praise the trees so straight and hy,
The sayling pine, the cedar proud and tall,
The vine-propp elme, the poplar never dry,
The builder oake, sole king of forrests all,
The aspine good for staves, the cypresse funerall.

The laurell, meed of mightie conquerours
And poets sage, the firre that weepeth still,
The willow worne of f rlorne paramours,
The eugh obedient to the benders will,
The birch for shafts, the sallow for the mill,
The mirrhe sweete bleeding in the bitter wound,
The warlike beech, the ash for nothing ill,
The fruitful olive, and the platane round,
The carver holme, the maple seldom inward sound.

Spenser's *Fairie Queen.*

Fruits and Flowers for the Home

This is the title of a little six page folder issued by this society for distribution at the state fair and to enclose in letters. It is reprinted here for the benefit of prospective planters. The lists here given are for the guidance of beginners especially for the farm orchard and back lot garden. Preserve this paper for reference when the nursery agent calls.

This information is for the home owner whether in the city or country.

Many farmers raise sufficient fruit for the family needs; every farmer should do so.

Back lots in cities and villages often offer splendid opportunities for fruit growing.

WHAT TO PLANT

The fruits named below are all standard, reliable, hardy sorts that have been grown in Wisconsin for fifty years or more.

Apples—(1 dozen trees enough for the farm home) 3 Duchess (early), 5 Wealthy (mid season), 4 Northwestern Greening (winter).

If a greater variety is desired add: McIntosh (mid-season), Tolman (winter), Windsor (winter).

For north-central Wisconsin substitute Patten Greening for Northwestern and omit McIntosh, etc.

Do *not* plant Transcendant crab anywhere in Wisconsin on account of its tendency to blight. Plant Martha or Hyslop instead.

Plums—Surprise, DeSoto, Hawkeye, all natives, all reliably hardy anywhere in Wisconsin and all sure croppers.

None of the European or Japanese plums are long-lived in Wisconsin but trees of certain varieties often live to bear several crops.

Try: Green Gage, Lombard and Moore's Arctic, for European and Burbank for Japanese.

Cherries—Where cherries thrive plant Early Richmond and Montmoreney, no others.

Grapes—Concord and Niagara, mostly Concord.

Blackberries—Eldorado.

Strawberries—Dunlap and Warfield.

Raspberries—black, Plum Farmer; red, Cuthbert; purple, Columbian.

Currants—Red Cross.

Gooseberries—Downing.

Do not buy novelties and newly introduced varieties unless you can afford to lose money. Stick to the old reliable kinds.

WHEN TO BUY

Place your order in fall or winter for early spring delivery. Do not plant fruit trees in the fall.

CATALOG VS. AGENT

Very good trees and plants may be had from nurseries that sell only by catalog.

The agent solicits your order, delivers the plants at your door and will usually come again the following year. Take your choice, both plans are good.

For advertisements of reliable nurseries consult *Wisconsin Horticulture.*

TREES FOR SHADE AND ORNAMENT

Roadside and Street Trees—Elm, Basswood, Norway Maple.

Lawn Trees—For large lawns any of the three named above or Hackberry, Green Ash, Scarlet Maple.

Consider carefully the future before planting any large growing trees on small lawns.

Flowering Shrubs—Common lilac, Persian lilac, Tartarian honeysuckle, Rosa rugosa, Syringa, Van Houten's spirea (bridal wreath), Barberry. These are all hardy in any part of Wisconsin.

ROSES

Harrison Yellow, Persian Yellow, Rosa rugosa and various types of the old Provence or Cabbage rose are all as hardy as hazel brush and need no winter protection anywhere in Wisconsin.

For finer roses plant Gen. Jack, Magna Charta and Paul Neyron, but give these thorough winter protection.

For a more extended list see Annual Report State Horticultural Society.

Do not buy "tree" roses or other high-priced novelties.

Three hardy perennial vines—Ampelopsis or American Ivy, Wild Grape and Trumpet Honey suckle.

Six hardy herbaceous perennials—Peony, phlox, larspur, bleeding heart, lily of the valley and day lily.

SPRING FLOWERING BULBS

These must be planted in the fall, September or October, and bloom early in spring.

Tulips—Artus, red; Chrysolora, yellow; Cottage Maid, pink.

Hyacinth—Charles Dickens, pink; Baroness von Thuyll, white; Baron von Thuyll, blue.

Crocus—Mixed.

Narcissus (daffodil)—Von Sion.

The State Horticultural Society will furnish information free of charge about the kinds of trees and plants suitable for planting in Wisconsin, their hardiness and adaptability for specific purposes, etc., but does not furnish planting plans.

Order Seeds Now.

There will probably be seeds enough of the common garden vegetables to go around, but in order to be sure of the kinds you want, order at once. At that you may be disappointed in some of your favorite kinds, but that will not be a calamity. There are at least a dozen kinds of very good beans and the same of peas. Two or three days' difference in earliness or the shape or color of pod is not serious.

The New Spray Gun.

A member wants to know about size of hose to use on spray pump and also says: "I notice all firms manufacturing spray pumps are advertising spray guns as a great improvement over the spray rod. Have you had any experience with them? Is it really an improvement? Do you think they will replace the rods?"

Dr. E. D. Ball, state entomologist, replies as follows:

I would recommend ½" hose. If heavy walled high pressure hose is used this size is heavy enough to handle, and, at the same time, the bore is large enough to carry all the liquid necessary.

The spray gun as advertised by the spray pump manufacturing companies is not intended to replace the spray rod in the spraying of orchard trees and in places of this kind. The real advantage of the spray rod in the orchard is that one is able to bring the nozzle up close to the tree and by the use of a bend or angle at the end of the rod the spray can be directed in any direction, and a thorough job of spraying done. The spray gun, on the other hand, is for reaching the tops of tall shade trees and places like that, where a rod is not even long enough. They are using these guns to spray elm trees in the New England states, throwing a spray from 40 to 60 feet in the air. This is used for distributing poison for leaf-eating insects, such as the Gipsy Moth, Brown-Tail Moth, Elm Leaf Beetle, and insects of that class and is probable satisfactory for this work. We do not have many calls for this class of work in Wisconsin, so it will be only of minor importance with us.

Something About Strawberries.

A member asks: Which is the better system for growing strawberries, the hill system or the matted row? For the benefit of the amateur: Strawberry plants set out in the spring send out runners from which new plants are formed. Strawberry plants set 2 feet apart in rows 3 feet apart will cover the entire space by fall if not restricted. In the matted row plan the runners are restricted to a space eighteen inches to two feet wide and a space left clear between the rows for cultivation. The hill system consists in removing all runners as they appear, throwing all the strength into the original plant. The plants may be set much closer by this plan.

The hill system yields larger and finer berries than the matted row, but the yield per acre is less and the cost of production is much greater.

For all ordinary markets grow strawberries by the matted row plan. This is the accepted method, yields profitable crops under all

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company

Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or samll quantities.

Wauwatosa, Wis.

ordinary conditions and is inexpensive compared with the other plan.

How long may strawberry beds be kept fruiting without renewal, hill system?

A. The strawberry plant is perennial and theoretically it should fruit indefinitely. While the plants might, by exercising extraordinary care, live several years, it will be found that the "hill" plants will not yield profitable crops much longer than by the matted row plan, three or four years.

Punishment to Fit the Crime.

Why not take citizenship away from those whose words and acts show them to be violating their oaths of allegiance? America took these people into the national family. It gave them the rights for which thousands of Americans died and suffered in the past. This was done with the understanding that these new citizens would defend those rights and hand them on.

That citizenship was not given to be used to destroy the rights of democracy or to give aid to the autocracy from which the people of this country fled and against which they have fought for a century. Those who in this time of crisis refuse to work and fight for democracy prove their unfitness to enjoy citizenship.

Citizenship is a privilege not a right. Taking it away from those who have abused the privilege is making the punishment fit the crime.

Such a punishment would curb the disloyalty of those who make political capital out of their anti-Americanism. Those leaders of Wisconsin Pro-Germanism who first counted noses to see whether it would pay to exploit the race hatred and un-Americanism they cultivate, would find their political capital confiscated if their citizenship was taken away. Even those native born Americans who are seeking political profit from race hatred and disloyalty would be discouraged if they understood that naturalized voters who followed them would lose their right of citizenship.

If those naturalized citizens who are seeking to trade in this treasonable market were certain that they could never realize their political profits it is probable that many of them would lose their interest in the success of the Kaiser.

Wisconsin Patriotic Press Ass'n.

Opening Up the Fruit Farm

D. E. Bingham, at Minn. Society Convention

Let us take it for granted that your Secretary in putting this topic on the programme, as he did, had reference more particularly to the tree fruit farm. While the same conditions apply in many instances, in some they differ. For instance, strawberries and some of the other small fruits will grow and do well on *good* orchard land and will also grow well on land *not* good orchard land.

It seems to me one of the first points to consider in opening up the fruit farm is selection of the soil, for this is a long time investment and the soil must have a good foundation. There is danger of disappointment if the subsoil is too sandy, or too wet, a hard-pan, etc. Trees will not do well for long on soil of such character. We prefer a good clay loam with a good clay subsoil of such a nature as to insure good drainage. If we could have some gravel or lime rock in the subsoil all the better.

Suppose we have such a soil, we have other facts to consider also before it is a good orchard site. Air drainage is important. There should be nothing to obstruct the free movement of the air and the site should have sufficient elevation to insure good air drainage.

The soil should not be too rich in nitrogen. Land that would pro-

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
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Help Wanted
Reliable young men for farm and garden work. Will hire by the month or for the year. Write
Rasmussen's Fruit Farm
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GLADIOLUS
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Our bulbs are all our own grown.
Price list covering only choice varieties Gladiolus and Peonies sent on application. We make good anything sent out not as represented.
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EAU CLARE, WIS.

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Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

duce a good crop of corn might produce too much wood growth. This must be determined by observing the crops and the growth of the trees; if inclined to be excessive, the fertility should be reduced by cropping.

Planting. The varieties for the orchard, either for cherries or apples, differ with different localities and different individuals. We all have our notions, and that coupled with the difference in location widens the list of varieties commercially. Four to six varieties for forty acres is sufficient.

I am going to select four varieties and these all red apples, Snow, McIntosh, Dudley and Wealthy. (This for eastern Wisconsin, Secy.) These all have faults, and it is hard to find a variety that hasn't some faults. To those who object to the four I have mentioned I might suggest three or four more, Wagener, Salome, Seek no further and Liveland, all with some color.

One must consider the variety somewhat in determining the distance apart to plant. In the Northwest we can plant closer than in a milder climate. Our trees bear

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OUR SPECIALTY

The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices

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Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the bestthat can be grown in Wisconsin.

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Our Specialty: Planting and Developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

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JOHN K. RUGOWSKI
Pride of Wisconsin Seed Man
MANITOWOC, WIS.

young and consequently do not reach the size they do in the East and the Southeast.

We plant Wealthy twenty feet; McIntosh, Snow and Dudley twenty-five feet, Wagener twenty feet, Salome twenty-five feet, Liveland twenty, but if planted in with other varieties twenty-five feet. Were all these varieties to be planted in alternating strips of several rows each, across a piece of land, twenty-five feet would be the distance I would use.

Method of Planting. Our method is first to stake out our land, twenty-five feet square, lining up the stakes so they are in perfect rows, leaving twenty-five to thirty feet margin at the ends for convenience in turning later on. We use the tree placer of which I have a model. This device insures perfectly straight rows with all sorts of workers.

Holes are dug amply large and deep enough to take in the roots without bending. Long roots are removed or shortened into reasonable length for planting. By using a tree placer and placing it against the stake then tipping the point back it can stay in position until the hole is dug and the tree placed in the hole straight up. Then the point is again tipped down, and the tree comes where the stake was.

Nursery Stock. In either cherry or apple a two year, five to six foot tree, well branched, medium low head is about the ideal tree. The reason I choose a two year tree is that the roots are sufficiently large to be woody enough to allow a ready formation of calluses, while

McKAY NURSERY COMPANY
MADISON, WISCONSIN

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

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when you think of
"SCALECIDE"
it is all there is to
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Does *all* that any other spray will do —but no other spray will do *all* that "SCALECIDE" will do. Kills all kinds of scale—all forms of fungus and insects that can be reached in dormant season—and invigorates your trees—and costs no more *Read our money-back proposition* before ordering anything else.

Send for free booklet, "Profits in Fall Spraying"

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Door Co. Fruit Farm For Sale

Twenty-five acres, 1½ miles from Egg Harbor, about 1 mile from Horse Shoe Bay Club House. Five acres apple trees, four years planted, in fine condition, ⅔ McIntosh, ⅓ Fameuse, balance of farm meadow and wood lot. Excellent site for summer cottage. Will sell all or part. For details and blue print, address

C. W. DAVIS, BOX 444
Madison, Wis.

the roots on the one year tree will be principally bark and very much slower to callus.

Now that we have said two year, five to six foot tree—where must they be grown? I do not care where they are grown—Kansas, Alabama, Nebraska, Indiana, New York, Wisconsin or Minnesota—as long as they are five to six feet, well branched, healthy, and good root systems. The first cherries planted in Door County, Wisconsin, were from Alabama—below the blizzard line as they say, and five thousand acres now growing in the county all came from Alabama and Indiana, also most of the apples.

Fall Dug Against Spring Dug Stock. I prefer fall dug stock stored with roots in dirt, not in moss, or three-fourths of the roots may dry out during the winter. We want the mangled end of the roots to heal over, and, what is more important, we do not prune the roots of fall dug stock we plant in the spring. If they are pruned at all it should be done when stored and not after they come out of storage, as nature has healed the wounds, and you should not make new ones.

We should plant early, as soon as land is in good condition to work and before the trees have burst into leaf. Should the terminal buds be open, the tree should be pruned as soon as planted to take off that source of evaporation and keep the tree dormant as long as possible. Our best success is where the pruning and planting are done early and the trees remain dormant till roots have started to grow.

Pruning. Our rule in pruning is three-fourths of the top should be removed in a systematic manner, spacing the limbs right for after years and leaving only a few buds, cutting side branches shorter than the leader and to an outside or a side bud, though this is not absolutely necessary to the future shape of the tree.

The second year we can rearrange the head somewhat, and after that the good work should continue every spring.

Cultivation. Should crops be grown in the orchard, the cultivation conforms to the necessities of the crop being grown. Plowing in the spring and six or seven harrowings constitute pretty fair orchard culture. At all events use level culture, that is, do not ridge the tree rows one year and level them down the next. Always level culture. The gang plow, reversible disc, common cutaway disc, spring tooth, are what we use.

We consider early cultivation important at least every other year. On land that is to be built up we use the following method: cultivate till June tenth, then sow clover, a mixture of alfalfa, red clover and sweet clover, if you please. Leave this till June 1st of the following year, then plow it under. Continue cultivating till August. The next year cultivate till June tenth and repeat.

Winter Protection. When the orchard is young and on an exposed location the snow sometimes blows off and winter injury results. To avoid this if the orchard is being cropped one should sow a strip of oats or allow weeds to grow along the tree row to catch the snow.

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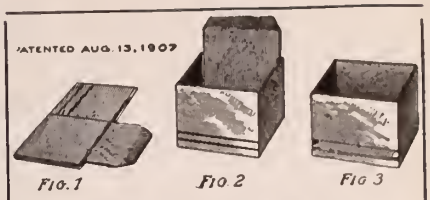

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Dept. D, Cumberland, Wis.

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WRITE FOR CIRCULARS AND INFORMATION

SUPPLEMENT
Wisconsin Horticulture

Volume VIII | Madison, Wisconsin, March, 1918 | Number 7

PLANT A GARDEN AND HELP WIN THE WAR

Circulars One and Two, War Garden Series.

GETTING READY FOR THE WAR GARDEN

Prof. J. G. Moore, Dept. of Horticulture.

(War Garden Series No. 1).

Most folks think February a poor gardening month but the fact is that the work done in February and March may largely determine the success of the garden. It is time now to begin to make definite plans for the garden work which is to be done later on. The planting season will be here before we know it.

Don't waste your effort next summer in gardening in competition with trees and shade. It can't be done successfully. Hoeing, watering and fertilizing cannot make up for lack of sunlight. Many gardeners tried to make this substitution last year and failed. Good garden tracts may be spoiled by worthless, often self-planted, trees or shrubs. Cut them out so your vevetables may not have to compete with them for sunlight, food and water. You will probably find, also, that your back yard looks better without them.

If it is impractical to remove the offending plants, or if buildings shade your garden for the greater part of the day begin at once to make arrangements for a suitable garden tract. Ask the aid of the local organization which is helping to get gardeners and the garden tracts together.

That Garden Plan

What kind of a house would a carpenter build without a plan? How would a garden which was planned, row by row, while the planting was being done compare with one carefully planned in advance of planting? The professional gardener finds a plan necessary for best results. A definite plan is of even more importance for the small garden if the best results are to be secured. Hap-hazard, hit-or-miss garden planting usually results in poor use of the soil and lessened production. A good plan saves much valuable time at planting because the gardener doesn't have to stand around and figure out where things are to go.

As soon as you know where your garden is to be, measure your tract and then plant your garden on paper. A good working plan should show:

1. Location of the different crops.
2. Distances between rows.
3. If more than one crop is to occupy the same area during the season.
4. Approximate dates for making different plantings of lettuce, peas, radishes or other vegetables of which more than one planting is made.

Use heavy paper and ink so that your plan will stand a season's use in the garden.

It is well to use a definite and fairly large scale in showing distance between rows. For a small garden one-fourth or one-half inch on the plan to every foot in the garden is a convenient scale. The more carefully your plan is made the greater will be the returns from your garden.

In making a war garden there are certain things to remember.

1. **Make every foot of land work all the time.** As soon as one crop is harvested another should take its place if there is room for its proper growth. Practically all of the garden should grow two crops and part of it ought to produce three. Warm season crops such as beans and tomatoes, and late seeded crops like turnips may follow early cool season crops such as lettuce, spinach, radishes and onion sets.

2. **Vegetables which can be stored for winter use should be considered first.** The vegetables will be more appreciated when the supply is low and the price is high.

3. **First plan for the long season crops—the short season crops will take care of themselves.** Grow short season crops (lettuce, radishes, spinach) between the rows of long season crops. Globe radishes may be grown in the rows of carrots, parsnips and beets. They can also be grown between the young plants of cabbage, tomatoes, or corn in hills.

4. **If your garden is small you cannot afford to grow crops requiring lots of space.** Potatoes, corn and vine crops should usually be left out of the small garden. If these are grown the smaller, quick-growing crops should occupy the space until it is needed by the permanent crop.

5. **Foliage crops (lettuce, spinach) are likely to do better in partial shade than the fruit crops (tomatoes, beans).**

6. **Do not plant high-growing plants (corn, tomatoes to be staked) where they will shade the sun-loving plants.** The difficulties arising from shading can be greatly lessened by having the rows run north and south.

7. **Unless you have had previous experience do not waste your time on cauliflower, peppers, egg plant or other crops that are hard to grow or of doubtful value.** These crops so often fail due to weather conditions or slight errors in culture that it is advisable to give their space to more certain crops.

8. **Remember that in a small garden there is plenty of space "up and down" but it is limited sidewise.** Tomatoes should be trained to trellises or stakes. Tall growing peas trellised and planted between rows of smaller vegetables require no more space than dwarf varieties and usually produce larger crops. If you think you must grow cucumbers try the trellis method.

9. **"Variety is the spice of life."** Provide for as large a variety of vegetables as practical. You might get tired of a steady diet of one kind.

10. Leave sufficient space between the rows to provide for good tillage. It is better to have slightly too much than too little space. The beginner will need a wider space between the rows than the experienced gardener. Be on the safe side.

Space Needed for Various Vegetables

The distance between the rows will vary with the method of cultivation, the size of the variety, and the fertility of the soil. The distances given below are for hand or wheel-hoe cultivation and average fertile soil.

8– 9 in.—Peas when planted in double rows.
9–12 in.—Radish.
12 in.—Cress.
12–15 in.—Beets, carrots, lettuce, onion, spinach.
15–18 in.—Bush beans, endive, parsley, rutabaga, salsify, turnip.
18–20 in.—Parsnips, peppers.
18–24 in.—Cabbage (early), chard, kohlrabi.
24–30 in.—Cabbage (late), peas, tomatoes (staked).
30–36 in.—Egg-plant, potatoes, sweet corn.
30–48 in.—Celery (depends largely on method of blanching).
42–48 in.—Squash (bush), tomatoes (unstaked).
4– 6 feet—Cucumber.
5– 6 feet—Muskmelon.
7– 9—Squash (running).
8–10 feet—Pumpkin.

When vegetables of different kinds are planted in adjoining rows the distance between the rows should be approximately one-half of the total distance allowed for the crops. For example, if celery, for which is allowed 4 feet between rows, and cabbage, for which a distance of 2 feet is allowed, occupy adjoining rows the distance between the rows should be about 3 feet.

Time Crops Occupy Land

The length of the time between starting the crop in the garden and that at which it is ready to use and the time it will occupy the land are important factors in garden planting. Seasonal conditions and the variety will greatly modify the time required for vegetables to be ready for use.

The following list shows the average time needed to grow the different vegetables. In planning for crops to follow early vegetables or which will occupy the space used by an early crop, add to the time given in the table below the probable length of time required to use the early crop or the length of time required for it to become unfit for use.

The dates given are the approximate dates of planting at Madison. For the central part of the state the dates would be from 10 to 12 days later, and for upper Wisconsin, 18 to 20 days later.

In the table which follows, * placed before the name of a crop indicates that other plantings may be made; ** indicates that the crop occupies the land until the end of the season. In the case of *** other plantings may be made as the crop is used, but the winter crop occupies the land until the end of the season. Early cabbage will occupy the land unitl August 15 or later.

* Bean (bush) snap—May 10–15—7 to 8.
** Bean (bush) dry—May 10–15.
** Bean (pole)—May 10–15—8 to 9.
*** Beets—April 15–20—8 to 9.
Cabbage (early, plants) April 25–30—12 to 13.
** Cabbage (late, plants)—June 25.
*** Carrots—April 15–20—9 to 11.
** Celery (plants)—June 20—7 to 8.
* Corn (early)—May 5–10—9 to 10.
** Corn (late)—May 15, June 10.
Cress—April 15–20—4 to 5.
** Cucumber—May 15–20.
** Egg plant—June 5–10.
*** Kohlrabi—April 20–25—9 to 10.
* Lettuce (seed)—April 15–20—6 to 8.
* Lettuce (plants)—April 20—4 to 6.
** Muskmelon—June 1 (start plants under glass).
** Onions (seed)—April 15–20.
** Onions (sets)—April 15–20—9 to 10.
* Parsley—April 15–20—12 to 14.
** Parsnip—April 15–20.
* Peas—April 15–20—8 to 10.
** Peppers—June 5–10.
Potato (early—May 1–5—10 to 12.
** Potato (late)—June 1–10.
** Pumpkin—June 1.
* Radish—April 15–20—4 to 6.
** Radish (winter)—July 15.
** Rutabaga—July 1.
** Salsify—April 15–20.
* Spinach—April 10–15—4 to 6.
** Squash (bush)—May 10–15.
** Squash (runner)—May 10–15.
** Tomato (plants)—May 15–20.
Turnips (spring)—April 15–20—8 to 10.
** Turnips (late)—July 20.

HINTS FOR THE WAR GARDEN

(War Garden Series No. 2).

Frederick Cranefield, Secretary, Wisconsin State Horticultural Society.

The beginner in gardening is apt to attempt too much. **A small garden well tilled is better than a larger one neglected.**

Amateur, home, or so called "war" gardens may be divided into two classes; the small back lot gardens ranging in size from 6 x 10 feet to those of as many yards, and the gardens of the more ambitious amateurs occupying an entire lot or even more.

To Plant or Not to Plant

In the small garden confine the list to kinds requiring but little room such as:

Bean, beet, cabbage, carrot, lettuce, onions, parsnip, pea, radish, spinach and tomato. Not much more should be attempted except that late turnips or rutabagas may be grown as succession crops.

These Demand Much Elbow Room—Sweet corn, cucumber, squash and pumpkin require much room and with potatoes should be attempted only where plenty of land is available.

These Are Too Fancy—Brussels sprouts, cauliflower, celery, endive, egg plant, peppers and lima beans are kinds that require rather more skill to grow than the average amateur is apt to possess and should not be included in the beginners' list.

Soil conditions and the taste of the gardener are factors that should be considered.

The beginner is usually very ambitious and is apt to try everything named in the catalog. The old-timer confines his efforts to a few kinds, the ones most in demand in the kitchen.

The "Best" Varieties

Ask each of a dozen expert gardeners to make a list of "best" varieties and the result will be a dozen different lists, for each has his favorites, but on discussion it will usually be found that their distinctions are too slight to be considered seriously. All the important garden vegetables are classified by the experts as to **types** such as the round radishes and the long radishes, round beets and flat beets, etc. Each seedsman has varieties which he exploits as the "best" of these types.

The following lists may not include the best kinds in the opinion of many expert gardeners but all are standard, reliable and thoroly tested and at least plenty good enough for anybody:

Bean: Dwarf; Refugee wax; Refugee 1000 to 1 (green pod.) **Pole or climbing:** Cranberry or Horticultural; Kentucky Wonder. The last two varieties are climbing or pole beans and are recommended where space is very limited. The Cranberry, a climbing or pole variety, is very prolific, and the partly matured beans shelled are as good as Lima Beans.

Beet: Detroit dark red or Crosby's Egyptian. The first named is round, the second, flat or turnip shaped.

Cabbage: For early cabbage Charleston Wakefield, for late Danish ball head.

Carrot: Chantenay: this is a half-long carrot and better adapted to home gardens either for summer use or cellar storage than the Oxheart or other large types.

Kohl Rabi: White Vienna.

Lettuce: For early "leaf" lettuce either Curled Simpson or Grand Rapids. The Grand Rapids is rather better in quality than the Simpson but does not grow as rapidly nor stand as much hardship. The Grand Rapids is ideal for hot-bed culture.

For head lettuce plant only May King.

Onion: Yellow Globe Danvers or Southport Red Globe.

Parsnip: Hollow Crown.

Pea: Laxtonian; this is one of the best of the large podded, early dwarf peas and may be sown in succession. For a late maturing variety plant Champion of England or Telephone. The latter are tall growing kinds and require support.

Radish: Early scarlet globe or any early round or turnip shaped variety sown in succession. For a later variety Crimson Giant; does not get "pithy" in hot weather.

Rutabaga: American Purple Top.

Spinach: Bloomsdale Savoy.

Tomato: Chalk's Early Jewel; Ponderosa.

Turnip: Purple Top White Globe: The Yellow Globe is a large late maturing yellow flesh variety closely resembling rutabaga and of better quality.

Plants or Sets

For early onions plant onion sets. For early cabbage and tomato buy plants; plants for late cabbage may be easily grown in the garden; plant a packet of seed at the time of sowing early vegetables.

For the Gardener Who Has Plenty of Room and Time

Cauliflower: Early Snow Ball.

Celery: White Plume.

Cucumber: Improved Long Green.

Sweet Corn: Golden Bantam.

Egg Plant: Black Beauty.

Lima Beans: Burpee's Bush Lima, or Henderson's Bush Lima.

Muskmelon: Milwaukee Market.

Parsley: Champion Moss Curled; (Six plants enough.)

Pepper: Crimson Giant (sweet).

How to Buy

Buy seeds only from reliable seedsmen. They advertise in reliable papers. Avoid "bargains" in seeds, the best is the cheapest. The cost of seed is not a big item considering the returns. Penny packets and department store bargains are to be avoided. "Seed Tape" is expensive and of doubtful value.

Quantity of Seed Required

The problem of how much seed to buy is one beset with many difficulties and not easily solved.

If we were certain that every seed we buy would germinate and produce a vigorous plant under the adverse conditions of soil and climate commonly encountered, we would need to buy but very little seed.

Carrots, for instance, should be spaced at least two inches apart in the row for best results. A package of carrot seeds contains about 5000 seeds which spaced at two inches would be enough to plant over 800 feet of row. In practice an average packet is enough to plant a little less than 40 feet of row. Why use so much seed? Firstly, because not all the seeds will germinate and as all the poor seeds may fall in one place we must allow enough to insure a good stand.

Secondly: conditions in the garden are never perfect for germination and growth and many of the plants perish before reaching daylight.

Thirdly: Seeds must be covered with earth, which is a dead weight that must be lifted by the plantlets. We must, therefore, plant seeds enough to afford lifting power to break the surface crust.

Fewer seeds are required when sowing later in the season than for earlier sowing, as the ground is then more mellow and seeds come up easier.

As war gardeners are interested only in small areas, ounces and quarts may be left out of consideration and attention directed mainly to packets of seed. In order to learn something of the actual size or contents of "packets" offered by reliable seedsmen 31 packets of seed were purchased from four seed firms and the seeds in each counted. The results follow:

Seedsman A—Onion, 1210; Carrot, 5427; Beet, 335; Bean, 156; Pea, 257; Radish, 1032; Spinach, 777; Parsnip, 1126.

Seedsman B—Onion, 1016; Beet, 500; Bean, 265; Pea, 394; Radish, 1408; Spinach, 990; Parsley, 850.

Seedsman C—Onion, 910; Carrot, 3720; Beet, 356; Bean, 258; Pea, 340; Radish, 1108; Spinach, 440; Parsley, 700.

Seedsman D—Onion, 1690; Beet, 585; Bean, 94; Pea, 169; Radish, 790; Spinach, 782; Parsley, 1892.

Av.—1206, 5473, 444, 193, 290, 1084, 747, 1142.

Combining these figures with the experience of skilled gardeners as to the proper number of seeds to plant per inch or foot, one packet of onion will plant 10 feet of row, carrot 40 feet, beet 29 feet, bean 20 feet, pea 25 feet, radish 10 feet.

Summing up it may b said that for the average family garden one packet of seed is enough of any of the kinds named except possibly peas and beans. By careful sowing one packet of most of the vegetables named is more than enough for the first planting and some may be saved for later planting.

Plant a Few Flowers

While food production should be the main consideration in our garden making efforts, every gardener may, at slight additional expenditure of time and money, add cheer and brightness to the garden by planting a few packets of flower seeds. Seeds of common annual flowers may be sown at practically the same time, in the same manner and in the same garden as the vegetable seeds. Aster and beet, mignonette and onion will grow in the same row and never quarrel.

In making out your seed list include one packet of each of these: Aster, Snapdragon, Candytuft, Alyssum, Coxcomb, California Poppy, Marigold, Mignonette, Nasturtium, Zinnia.

For additional copies of this bulletin address State Horticultural Society, Madison, or Colltge of Agriculture, Madison.

The next circular in this series will be by the Department of Horticulture, University of Wisconsin.

Potatoes should be kept in a temperature of about 38 degrees. If the air is dry, they should be covered with sand. They should also be kept from light, which will turn them green. Keep off till sprouts.

By means of the Florists' Telegraph Delivery it is possible to send flowers to any part of the United States by giving the order to a florist who is a member of this organization. They may even be sent to the soldiers in the French hospitals through the connections of this society in France.

Cut out old wood and thin the new growth of currants and gooseberries when the snow goes off. Too much brush and no cultivation make small berries.

War Gardens

Read at the Sauk Co. Hort. Society's First Annual Meeting, Baraboo, Wednesday, January 16, 1918, by C. A. Hofmann.

The subject assigned me for this evening, "War Gardens," is so expansive as to preclude the possibility of a thorough exposition in the time at my disposal.

I will, therefore, assail only the essentials, dwelling at some length upon the more necessary activities and leaving to your thought and future experience the minor details. First: what does the subject imply? Our Nation's Life and Liberty depends upon food. Every man, woman, and child who tills the soil, and produces food crops, must do the work of two, and yea—even more this year, if we are to remain a free nation.

The demand for food, the world over, is far greater than ever before—the millions upon millions of soldiers, sailors, ammunition workers and Red Cross workers, both men and women, have to be fed. Millions of our strongest and best young men have been taken from the ranks of the producers and it is therefore up to us, who remain at home, to do more than double duty, and do it quickly, if we would win this conflict. Remember we have no food surplus carried over to help out should we face a crop shortage or failure this year. Everything depends upon what we, as "Soldiers of the Soil," produce this season. Do not tarry with indecision, but put your whole patriotic effort into the work this year to grow the biggest and best bumper crops that you have ever grown. And if there are those among this gathering this evening, either large or small, who, in the past, have made no effort in this direction, let them pledge themselves to-night to buckle on the armor and go forth, with the advent of Spring, to do their all for God and Country.

Do not wait until it is too late—make your plans immediately—start your field work earlier than ever, till your soil oftener and more carefully. And in making your plans and in prosecuting your work let one all important thought prevail, "**Plant Only Carefully Saved and Accurately Tested Seeds**"—so much depends upon this. The original sin of the gardening cult is the waste of seed. This not only applies to the amateur, but also in a measure to the professional grower. Don't do it. Hooverize! Good seed is already scarce, and it is growing scarcer as days go by, for already thousands of the world's best seed growers have laid down their lives for Liberty.

I presume that all who are present this evening are deeply interested in this War Garden work, but should there be those among us who are here from idle curiosity let me say to you, as well as the others, that if you will but embark upon this work you will be amply rewarded, not only in dollars and cents, for your earnest work and thought, but better than that, you will have the conscious conviction that you are doing, not only "Your Bit," but "Your All" for the Life and Liberty of this Glorious Country we all love so well. Now let us consider the requisites for success in any garden, be it large or small. The first is the proper preparation of the soil which is to produce the crop. Be the plot, one which has never been cropped with vegetables or has grown to grass and weeds, or has produced a hay crop for a number of years, or be it one which has been worked constantly it must either be plowed or spaded. A general mistake is the accepted shallow plowing or spading.

My experience is that ground should be worked to a depth of from 10 to 12 inches and if possible, the late fall is the better time to do this. But before doing this a thorough coating of good fertilizer should be applied except, perhaps in the case of land which has previously grown clover or timothy and even with that a light scattering of well decayed manure is beneficial.

This is very necessary if good results are to be obtained. You would not expect your cows to produce milk if not fed, neither can you expect your soil to bring forth good crops without proper and judicious feeding.

When possible use manure which has thoroughly decayed except perhaps in the case of heavy clayey soils, when that consisting of more litter, such as hay, straw or corn fodder, can be used to lighten up the ground.

The more common manures, readily procurable, and their relative plant food values are as follows: Sheep, Hog, Poultry, Cattle and Horse Manures. Then where these are not easily obtained there are the commercial fertilizers or fertilizer ingredients such as Phosphates, Nitrates, Tankage and Muriates. The latter, however, require a greater knowledge of application than the former and are not advised except with a thorough knowldge of the necessity and use.

Where it is expensive to secure a proper quantity of home-made

or commercial fertilizer, many sow rye or legumes and when they have attained the desired growth plow them under for the later planted crops.

Where ground has been fertilizer and plowed the preceding fall, all that is necessary in the spring is to thoroughly work the ground with a disc harrow followed by a smoothing with a spring tooth one. In the case of small gardens the same results may be obtained by thoroughly and deeply hoeing then leveling with the garden rake And now that we have our ground in shape let us consider the problem of sowing the seed. Of course, long before it was possible even to get into the garden for any work, the professional grower had long since planted seed for his early vegetable plants and they are now also ready for setting out.

The amateur grower also has made his attempts in this direction but usually with less fortunate results than in the case of the former, owing to his not being properly equipped. It is very necessary in order to produce the earliest vegetables, and from a monetary standpoint the best paying, to have proper equipment for the propagation and growth of good plants, ready for the garden at the earliest possible moment when danger of frost has passed, and as the small or amateur gardener cannot thus equip himself my advice is that he arrange to purchase his wants in this direction from some reputable grower as it is essential that he have at least a few of each variety, whether it be for profit or for the pleasure of his own table. For the plants of the later vegetables, where out of door seed beds can be used, any one can successfully grow with the same results as attained by the professional grower. Now as to the sowing in the garden or field. Many mistakes are made in sowing, with the result that the seedsman is often blamed for supplying seeds that fail to germinate, when, as a matter of fact, in a large proportion of cases, the failure is due to the lack of understanding a few fundamental principles in seed germination. Three conditions are necessary, namely: moisture, air and warmth, for proper germination. Frequently the cause of failure is due to sowing too deep, which either causes the seed to lie dormant or rot in the ground.

The approximate depths at which to sow are as follows: peas, corn, beans and seeds of similar size: two to three inches; beets, cucumbers, melons, etc., one inch; carrot, cabbage, parsnip, lettuce, turnip, tomato, pepper, etc., one-half inch. Very small seeds should only be pressed into the soil and slightly covered with sifted soil. While I advise the amateur not to attempt the growing of plants indoors, for the earliest vegetables, this advice is not extended to the production of plants for the later or main crops. My principal reason for advising against trying to raise plants for the earliest vegetables is that these require sowing indoors during February or first of March and with improper top light, a condition most prevalent in ordinary homes, the plants become drawn or leggy and thin, long before the weather is suitable for transplanting them to the garden, with the result that even if they survive transplanting, they never obtain perfect shapes or yield as they should.

However, for the production of plants for the later or main crop, select a warm sunny corner sheltered at the back by a fence or wall, if possible, secure an old window sash and fit it to a shallow frame and use as a seed bed. The sash is a great protection to the young plants during the cool nights. In such a bed, early cabbage, cauliflower and celery plants may be successfully grown. If the soil is dug out for the frame and fresh stable manure is tightly packed in the bottom of the frame sufficient heat will be generated for starting the seeds of such tender plants as tomatoes, peppers and egg plants, or these may be started in the house during the first part of April and transplanted to the frame when the early cabbages, etc., have been set out. Never seed while the ground is wet as, during rapid evaporation, the ground will bake and retard, if not entirely stop, the growth. And now to an all important procedure to ultimate success: Cultivation. During the past season I inspected many gardens where this action was almost entirely neglected or superficially done. In the former, weeds were choking the plants while in the latter, they were dwarfed and stunted from lack of moisture. To obtain the best results keep the soil loose and fine by frequent workings, as deeply as possible, without injury to the plants. Keep up this thorough cultivation throughout the season never allowing the soil to become hard and baked. A mulch of dusty surface soil, even to the depth of two or more inches, is preferable to a hard baked surface, as this kind of cultivation tends to conserve the moisture so necessary in time of excessive drought. I also

noticed that many preferred watering to cultivating. Watering, at times, is beneficial but let nature provide that, if possible, and you continue the thorough and deep cultivation at all times except when the ground is too wet.

I have been frequently asked, "What shall we plant in our garden?" This is a question for each gardener to answer for himself.

Plant those vegetables, in small gardens, which will best suit the palates of the family for whom you are producing and also which you can store for winter's use. To those who cultivate large tracts I advise the study of the needs of the market for the earlier vegetables and the planting of more of the keepers which can be stored and sold to advantage during the late fall and winter months. And let us also remember, that, upon well enriched soils, several crops may be grown on the same plot in one season: I have frequently taken four crops from the same soil in one season.

If you are growing for market it is well to remember that you must exercise care in the selection and preparation of the vegetables so offered if you are to retain the patronage of the public. Gather as soon as the vegetables have reached sufficient size.

With most vegetables the finest flavor and freshest condition is obtained by gathering early in the morning. With top crops, trim off all excess and discolored leaves and with root crops wash with cold water, using a vegetable brush. Bunch and tie so that they look tempting, as appearance counts for much. Much can be added to the pleasure and profit of the small garden especially by adding a few of the small fruits, some rhubarb, horse radish, herbs and above all, a small asparagus bed.

As to the storage of excess crops I advise gathering when thoroughly ripe and before danger of freezing, and storing in cellars or root houses where the temperature can be kept just under that of freezing.

In passing I wish to compliment all upon the success of last season's effort, especially the boys, who made such heroic and successful attempts. This War Garden Work, however, is not alone for "Our Boys," but also for "Our Girls," and I would be more than pleased to see all who can take it up the coming season, if only in a small way. So no matter what you desire to grow, ask for any information you may desire, and you will receive it without any cost to you. In conclusion, make the soil as rich as possible, plant the best seeds obtainable, and plant again and again and again. Every citizen is comprised in the sum total of the nation's strength.

There are, and can be, no shirkers. Oportunity abounds for every American to contribute to the nation's support in one way or another. The war cannot be won if we continue to live in ease and comfort, carefree, and ignoring the responsibilities and duties that fall upon us individually, if the principle of human liberty is maintained.

Each individual in the nation is given an opportunity for personal heroism, sacrifice and greatness is the cause of liberty and freedom. This is yours, my friends, plant wisely and well and keep on planting.

Keep sand over the root crops in the cellar now. It will prevent their drying out.

Every Gardener His Own Seed Grower.

This is the very thing we have argued against in the past, believing that the average amateur gardener is apt to make a sorry mess of seed growing. Present conditions, however, have changed many things and ideas and opinions that seemed to us very important must needs be changed or modified. The fact is staring us in the face that garden seeds are scarce this year and the supply is apt to be even smaller next year.

It is also true that any one can raise seeds of many of the common kinds of flowers and vegetables sufficient for his own needs. Even if these seeds are not of the very highest grade, they will fill a gap until such time as the seedsman can provide us with something better.

The following directions for garden seed growing are by Prof. W. T. Macoun, of the Dominion Farms, Canada.

The ordinary garden soil or that found on the vacant lot will be found satisfactory in growing vegetable seeds and, while soil that is fertile and in good condition will give the best results, no special kind of soil or manure is necessary.

After the roots or plants have been set out in the garden, keep the surface soil loose and the ground free of weeds, in order to make the conditions as favourable as possible for strong growth. If there is danger of the plants being broken down, as there will be in the case of cabbage and celery and perhaps some of the others, a wooden stake should be driven down near the plant and the latter tied to it. The space required for plants of beet, cabbage, carrot, parsnip and turnips to develop is

from 2x3 to 3x3 feet, for celery about 1x3 feet, and for onions about 6 inches by 2 to 3 feet. *One row of seed plants across one end of a twenty-five foot plot will take up little room and will be sufficient to grow more than enough of the seeds that would be required of, at least, seven kinds of vegetables.* Parsnips and carrots make the sturdiest plants, hence these might be planted at each end of the row, which might be planted thus: 2 parsnips, 2 turnips, each 2 feet apart; 3 celery each 1 foot apart; 5 onions each 6 inches apart; 2 cabbages, 2 carrots, each 2 feet apart. Between this row of seed plants and the first row of vegetables there should be about three feet.

After the seed is ready to harvest, the sooner it is harvested, dried and cleaned, the better. Care should be taken that when drying there is a good circulation of air through the seed heads or pods so that they will not mould. When cleaned, put in paper bags or envelopes and keep in a dry place until spring. As mice are very fond of some kinds of seed see that they are safe from them.

The following table will give some idea of the probable seed yields per plant of the different kinds:

Kind of Vegetable	Yield per plant, in ounces.
Beet	2½ to 5½
Cabbage	2 to 5
Carrot	1½ to 2½
Celery	1 to 2½
Onions	¼ to ½
Parsnip	2 to 4
Turnip	5 to 9

Beets.—One good beet will produce more than enough seed for an average vacant lot or city garden. Before the winter's supply is used up, select two well-shaped specimens, in case anything should happen to one, and set aside until spring, making sure that the beet is of good, dark colour by taking a small piece out. When the soil is ready for seeding, plant the beet deep enough in the ground so that the top will be slightly below the surface. The flower stalks will soon be thrown up and when the plant is well grown it is desirable to tie the stalks loosely to a stake as they are liable to be broken down. Most of the seed will ripen at one time. When the seed begins to turn brown and before it is quite ripe, cut the plant and tie up for a few days to dry thoroughly, then,with a light stick, thresh off the seed and blow clean, and keep dry until spring.

Cabbage.—One head of cabbage will produce more than enough seed for the part of a city lot which is likely to be used for this vegetable. Save two solid heads and as soon as the ground is ready in the spring, plant about one-third of the head in the ground, and make a slit with a knife cross-wise over the top of the head, which will give the seed stalks a better chance to push out. In a short time these will do so and soon the plant will be in flower, pods will be formed and seed will develop. It is necessary to plant, at least, two cabbages as the flowers of one must be crossed with those of another in order to get pods well filled with seeds on either. This cross-pollination is done by insects. It is more satisfactory to plant the whole cabbage with the root attached, as there is less danger of the head rotting when this is done. When the roots are left on, the head simply rests on the soil, the roots only being planted. Good seed can be grown from the stump or root after the head has been removed, though this method is not recommended. Where only a small quantity of seed is grown the earliest ripe pods can be cut off as they turn yellow and the others as the mature. The seed is beaten out when dry, and cleaned.

Cauliflower.—As in most parts of Canada it is not possible to carry cauliflower plants over the winter the seed of this vegetable is more difficult to grow than most kinds, but plants started early will, in some places, go to seed if the heads are left uncut. Sometimes cauliflower seed is grown in a greenhouse.

Carrot.—One carrot will produce enough seed for a home garden. Save two shapely ones and in the spring plant as recommended for beets. The seed ripens much more unevenly than the beet and it is necessary to harvest each head as the seed gets ripe. Keep these clusters of seeds in a dry, airy place, and, when the seed is thoroughly dry, rub or beat out clean and keep dry until spring.

Celery.—One plant will produce enough seed for the home garden, but as disease sometimes attacks them it would be safer to plant three. At Ottawa, plants of both early and late varieties have been kept over winter outside by opening a trench just before severe frost and putting the plants close together and deep enough so that the tops are about level with the surface of the ground. A heavy layer of about a foot of straw is put over the tops and then soil thrown over to a depth of about fifteen inches. Even if the plants kept in the house or outside over winter have nothing but the heart or inner stalks left in good condi-

tion by spring, they will produce seed of good quality.

Plant in the spring about the depth the plant was when taken up in the autumn. It will not be long before the seed stalk will be thrown up. The seed does not all ripen at the same time but as seed will give good results even if harvested a little on the green side, the heads should be cut before much of the earliest ripe seed drops. When, however, there is the crop of only one plant to harvest, the seed can be gathered as it ripens. If the plant is cut before the seed is ripe it should be hung up to dry. Celery shells easily when the seed is ripe and as it is very valuable, loss should be avoided.

Onions.—A few well-shaped, firm onions should be saved for seed purposes. They should be planted out early in the spring about 6 inches apart in the row. If the onions have sprouted, the sprout should be cut off when being planted as straighter stalks will be thrown up if this is done. The upper side of the bulbs should be an inch or two below the surface of the ground after being planted. This will protect them from spring frosts. When the plants have grown sufficiently they should be banked up about 6 inches to help support the plants when the tops become heavy with flowers and seed. When the seed stalks show yellow near the ground the seed balls are cut off with about two inches of the stalk attached. The heads or seed balls are then spread out to dry and later the seed is threshed out. It is important to dry onion seed as rapidly as possible and to keep it dry.

Parsnip.—The parsnip is treated much as the carrot and it is surprising to a beginner in growing seeds to find how much seed can be produced from one root. In saving a parsnip for seed, select one that is the most free from side roots and one of the shortest and thickest available. There is a worm which is liable to eat the parsnip seed before it is ripe but the worms can be picked off by hand before they do much harm if one is on the lookout for them.

Salsify.—Save two or three plants of salsify for seed and plant and treat like the other roots.

Turnip.—Select two of the best shaped, sound turnips and set aside for seed purposes. The roots are planted as the carrot, beet, onion and parsnip and seed harvested when the pods turn yellowish-brown.

The Lengthening Days.

Wm. Toole, Sr.

With the lengthening of the days and the approach of spring the thoughts of those who love the great outdoors and especially their home surroundings, will again center upon what and where to plant the different varieties of flowers, shrubs and vegetables.

In touching upon shrubs and perennials it might not be amiss to state that these are damaged most by the winter season during the month of March; it is the occasional thaw and warm spells that draw the frost out of the ground, especially on southern exposures and induce the plants to grow only to be severely checked when the thermometer again goes back below the freezing point. The object in mulching plants and shrubs for the winter season is to keep the frost in the ground until the growing season is at hand and not to keep it out as many may be inclined to think. Therefore it is not a good practice to cover too soon in the fall or uncover too soon in the spring.

So anybody who neglected to cover plants or shrubs last fall or winter can still do so, providing the ground is frozen, and thereby save a lot of damage; to cover at this time it is not advisable to use fresh stable manure, any other thing will do providing it does not make an air tight job.

By the time these notes appear in print or soon thereafter the time has come when one's attention can be turned to the hot bed While most people know how to make a hot bed, it might be said that while the seeds or plants get plenty of sun to warm up things by day it is necessary to have at least 18 inches of warm horse manure at the bottom and plenty packed around the outside to prevent the cold night air from lowering the temperature of the soil inside. It is also highly necessary to ventilate the beds on bright days in order to keep the plants or seedlings from drawing up and damping off. About 5 inches of soil on top of the manure is sufficient in most cases. All early vegetables, and some of the early annuals can be seeded as soon as th soil in the hot bed is warm enough, which will be about four to five days after the hot bed is done; this is also one of the best places to start canna roots.

In closing be sure to procure the best seed obtainable and then sow sparingly; more harm is done by most amateurs by using too much seed than not enough.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, April, 1918 | Number 8

This lucky youngster has found a fine clump of Blood Root common in Wisconsin woods and fence rows in April. Later he will learn that botanists have named it Sanguinaria Canadensis.

Eliminate the Barberry and Increase the Food Supply.

Copy of Circular Issued by The State Council of Defense, Dr. E. D. Ball, State Entomologist.

Introduction.

Secretary of Agriculture, D. F. Houston, has requested the Governor of Wisconsin and the State Council of Defense to join the surrounding states of the upper Mississippi Valley in a campaign for eradication of the tall barberry. The black stem rust of wheat makes its first appearance in the spring on this bush and spreads from it to the wheat, oat, rye and barley fields. In this way widespread epidemics of rust disease have caused enormous losses to the farmers in past years and materially reduced the food supply.

The stem rust is the most severe disease with which the grain grower has to contend. In 1916, for example, the estimated shortage of the wheat crop in the United States was about 180 million bushels. Of this loss over 100 million bushels were directly attributed to rust injury.

Disease is Spread by the Wind.

The disease is known to spread long distances by germs or spores carried by the wind. These spores start new infections from which the disease is later distributed to still more distant points, so it may travel over a wide area after it has once been started. To control it effectively, therefore, the barberry should be eradicated at the same time from all parts of the spring wheat area of the Upper Mississippi Valley.

Eradication Has Been Successful.

In Denmark epidemics of black rust used to occur at intervals of a few years before the barberry was destroyed. Eradication of these shrubs was begun in 1904 and within a few years they were so completely eliminated that the rust epidemics have ceased to appear. Due to the success of the work in Denmark, the central European countries started barberry eradication several years ago.

The Dangerous Barberry

Eradication in This Country.

The state of North Dakota practically wiped out the barberry last year and has prohibited the growing of this plant within the state. Much progress already has been made in Iowa in reducing the number of these bushes. Minnesota has made the eradication of the barberry a war measure and will eliminate it from that region during the coming season as a patriotic act to increase the food supply of the world. Two Canadian provinces are reported to have passed eradication measures and the Canadian government has requested the cooperation of the United States government in a joint effort to eliminate this serious disease.

Wisconsin's Share in the Fight.

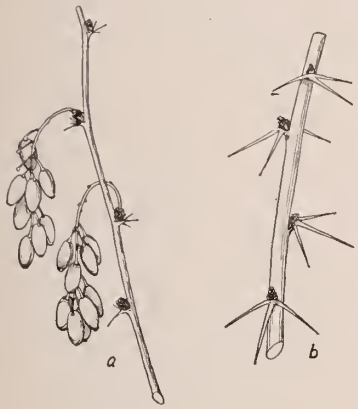
The state of Wisconsin produces oats and barley and is planning to increase the wheat acreage the coming season by about 40 per cent. An active campaign at this time, resulting in the elimination of the barberry from the state, would be of material assistance to the producers in their patriotic struggle to increase our food supply. Wisconsin will join loyally with her sister states of the upper Mississippi Valley to eradicate, quickly and effectively, this menace to food production.

The Harmless Barberry

Two Kinds of Barberry.

There are two kinds of barberry commonly planted in Wisconsin; the tall green or purple leaved bush called the European barberry and the low spreading reddish one or Japanese barberry.

THE DANGEROUS KIND. The tall barberry *(B. vulgaris)*, shown in Figures 1, 1a and 1b, has either green or purple leaves (var. purpurea) but can always be told by its upright growth and the fact that the spines are in threes and the red berries hang in clusters. When untrimmed it forms a tall, slender bush from four or five feet up to ten or more in height. This is the dangerous kind and should be removed at once.



Destroy this one

Leave this one

THE HARMLESS KIND. The Japanese barberry (B. thunbergii), is a low spreading, much branched, reddish shrub from 2 to 4 feet in height, with single spines and long rows of berries hanging singly or in twos on the spreading branches. This form is harmless and can be grown with safety. In later years it has been gaining in favor and has been planted much more commonly than the old fashioned tall form.

Eliminate the Tall Barberry.

In view of the serious food situation existing and the possibilities of checking these losses, the State Council of Defense requests that nurserymen, park commissioners and all others growing the tall barberry take immediate steps to destroy these bushes and that no more be planted in the state.

The Council further recommends that the County Councils of Defense take appropriate action in their respective territories and that they request all the available agencies, such as the county agricultural agents emergency food agents, weed commissioners, school officers, commercial clubs, boy scouts, and last, but by no means least, the women's clubs, to assist in securing the eradication of these bushes by or before Arbor Day, so that the propagation of this disease and transmission of this year's crop of grain be effectively prevented.

Purchasing Power of Money in War Time.

The slogan, "business as usual," promoted both by "big business" and little business in England early in the war very nearly brought about national defeat and surely served to prolong the war. It is decidedly not "business as usual" in England now. War is the business of every man, woman and child.

We are going through the same period here now. Manufacturers and dealers in non-essentials of whatever kind, especially pleasure automobiles, are struggling to hold on to their trade and are urging people to spend money. The newspapers, bribed by fat fees for advertising, aid and abet the game. Very rarely do you find an editorial urging people to **save**. More often it's a plea to **spend** money even on things not essential so as to keep business as usual. This is selfish and unpatriotic and an unsound economic philosophy.

A committee of eminent economists engaged by the government in the study of the purchasing power of money in war time has reached a different conclusion.

After exhaustive investigations this committee has reached its conclusion unanimously. It would impress upon us the imperative need of a reduction of consumption and an increase of production, of the repression of nonessentials, and of promotion of organization and redirection of industry.

"In meeting the great national readjustment to war conditions," the committee says, "we must not let our 'business-as-usual' impulses prevent the needed saving and shifting of industry, lest we pay a terrific penalty in higher cost of living and national inefficiency."

Use fruit and nuts, candied honey or maple sugar for cake fillings.

For dessert serve a fruit salad or fruit omelet; cream cheese with honey or fine preserves; friut desserts with honey or just enough white sugar to bring out the fruit flavor.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Observations and Suggestions by

A. W. Chaney.

Fighting the Fire Worm: Wisconsin seems to have suffered unusual damage from this pest last season. Probably the cold summer was the cause of the eggs hatching so irregularly that repeated floodings seemed necessary. These repeated floodings greatly reduced and often destroyed the crops. For a number of years the New Jersey growers have suffered severe ravages of the fire worm. The New Jersey growers, Mr. Scammel and other government experts, have tried many experiments. Some of them seem to have proven very successful. During last season I made diligent inquiry as to methods and results. Mr. Scammel seems to have proven that nicotine, mixed one gallon to seven or eight hundred gallons of water and sprayed at the proper time, is very effective. When the fire worm appears in the blossoming period or after the fruit is set, flooding is very likely to injure or destroy the crop, whereas spraying with nicotine greatly retards the fireworm damage and even frequently totally destroys them. Mr. White, Mr. Harrison, Mr. Holman and other well known growers have proven that by spraying at these times they often save at least one-half of the crop, whereas the flooding at that dangerous period would totally destroy it.

This nicotine is a contact poison, known as "Black Leaf 40," and is much more effective than food poison, such as aresnate of lead, Paris Green, etc. It costs around $10.00 per gallon; but using only one gallon to eight hundred gallons of water does not make it expensive. Two sprayings are often advisable, and the sprayings should be two or three days apart, as it is strictly a contact poison. That which appears to have been the most successful remedy is about as follows: In the spring, before taking the water off, lower the head so that the vines are just barely covered with water. This shallow flooding will help to warm the soil and give the vines an opportunity for an early start. Then at about the usual time, take the water off and leave it off from three to five weeks, watching very closely for the fireworm to appear. After they have appeared pretty generally over the bog and most of the eggs have apparently hatched, re-flood, covering everything with water and keeping it under water five days.

Make a kerosene torch with a gas pipe or tubular handle to hold the oil fuel, and wade over the bog, or go over it with boats, and *burn* everything that sticks above the water, such as high vines, grasses or weeds, giving the worms no opportunity to crawl above the water and live. Some suggest that cutting off these grasses or weeds that stick above the water and letting them fall into the water will accomplish the same results. This method seems to have effectively destroyed the fireworm when flooded at the right time. Some growers insist that when the eggs are almost ready to hatch, that by putting them under the water for several days they will never hatch. It is well then to have some Black Leaf 40 on hand ready to use, and, if the second crop does appear during or after the blossoming period, spray with the Black Leaf 40 to avoid endangering your crop. Give it two or three sprayings.

Another Method—One of the largest and very successful growers in New Jersey seems to have overcome the fireworm very completely by using the following plan. He makes it a practice to spray with Black Leaf 40 as soon as the buds begin to burst, using one gallon to 700 gallons of water. He follows this spraying with a re-flooding after any worms that are left appear, or have had ample time to appear and become about half an inch long, or have dropped to the ground. He says he has not lost 500 bushels by the fireworm in the last four years by following this method. He thinks, and it seems to me he has demonstrated it, that by spraying before the fireworm is easily seen and follow with the flooding, is more successful than the first plan mentioned.

Two typographical errors occurred in the March number which we think best to correct. Near the bottom of second column on page 100 "blashed" should be—blighted—and top line of third column on page 101 "remove rake ends" should be—remove rake wads.

The Lester Cranberry Co. have decided to put in a pumping plant to improve their water supply. Probably a 3,000 gallon a minute pump.

Control of Cherry Leaf Spot in Wisconsin*

G. W. Keitt

Bulletin 286 Wisconsin Agricultural Experiment Station.

*The matter presented in this bulletin is to be accepted as a report of progress based upon two seasons' work. It was Dr. Keitt's plan to continue this work for a third season and present the detailed data in a research bulletin. Owing to his absence in war service it has seemed best in order to meet the practical needs of the fruit growers to publish the essential results in the present form. When conditions permit it is expected that the investigations will be completed and the full data published as originally planned.

L. R. JONES,
Professor of Plant Pathology.

Leaf spot is the most serious fungus disease of the cherry in Wisconsin. Its control is necessary for profitable commercial cherry culture in this state.

For many years Wisconsin orchardists have been able to control this disease by persistent spraying with Bordeaux mixture. However, the time and number of applications and the concentration of the spray necessary for the best and most economical results have remained to be determined. Furthermore, the recent high prices of copper sulphate and the scarcity of labor have made it extremely important to reduce the cost and labor of control measures and to develop, in case of need, a control program which is independent of Bordeaux mixture.

The Nature of Leaf Spot Injury

The leaf spot disease affects not only the foliage, but also the fruit and fruit stems. On the leaves, it appears as small roundish spots which often occur so abundantly that they run together and form large irregular dead patches. Under certain conditions, the dead spots drop out and on account of the resulting appearance of the leaves the disease has often been called "shot hole." Badly affected leaves ordinarily turn yellow and drop. This has led many to call the disease "yellow leaf." It should be borne in mind, however, that certain other troubles may show very similar symptoms, and that there is danger of confusing leaf spot with other foliage injuries. On the fruit and the fruit stems the disease appears as small brownish or reddish spots. The chief injury to the fruit, however, results from the loss of vitality of the tree, due to loss of leaves. In cases of severe attacks, the fruit often fails to mature, and wood and bud formation are seriously hindered. Repeated severe attacks may kill the tree.

Leaf spot is caused by a fungus. This parasite lives in the diseased parts of the cherry plant in the summer and passes the winter in the dead leaves on the ground. In the spring it produces spores ("winter spores") which are shot into the air. Some of these lodge on living cherry leaves. Here they germinate, grow into the leaf, and produce the disease. On the under surface of the resulting spots, small "blisters" usually develop. These break open, and a whitish material ozzes out. This is made up of thousands of spores of another type ("summer spores") which spread the disease very rapidly.

FIG. 1—CHERRY LEAF SPOT

Diseased leaves bear roundish brown spots, on the under surfaees of which "blisters" usually develop (right figure). These "blisters" are filled with spores, which rapidly spread the disease. Such leaves usually turn yellow before they fall. Often the dead areas fall out and a "shothole" effect results.

Early Clean Cultivation

Leaf spot may be fought by means other than spraying. The weakest point in the life history of the leaf spot fungus occurs when it passes the winter in the dead leaves on the ground. If all these dead leaves could be destroyed and if the fungus harbored on no other plants, spraying would not be necessary. While it is not practicable to practice sanitation with such thoroughness as to make spraying unnecessary, it is possible greatly to strengthen the spray schedule by turning under as many of these leaves as is feasible by clean cultivation in the spring before the spores of the fungus are discharged. Our studies of the fungus have shown that "winter spores" usually begin to be discharged at about the time the blossom buds of the cherry begin to break open. Clean cultivation should precede this period. Most Wisconsin growers cultivate before this time anyway. Therefore, much may be gained with little additional expense by making the cultivation as clean as is practicable instead of leaving unturned strips or large blocks about the bases of trees.

Spraying

The spray to use. The following sprays were tested comparatively: Bordeaux mixture (various strengths), lime-sulphur (various strengths), self-boiled lime-sulphur (8 lbs. lime and 8 lbs. sulphur in 50 gals.), "atomic sulphur" (5 lbs. in 50 gals.), and "barium sulphur" (3 lbs. in 50 gals.) Four applications were made, approximately as follows. (1) when the blossom buds showed white, just before blooming, (2) just after the petals fell, (3) about two weeks later, and (4) just after the fruit was harvested. Similar tests were made in which the first treatment was omitted. Arsenate of lead powder (¾ to 1 lb. in 50 gals.) was added to the fungicide in each application.

Bordeaux mixture and lime-sulphur controlled the disease very satisfactorily. The other sprays tested failed to control the disease satisfactorily. The results in the two years were confirmatory. It is evident from these experiments that, under Wisconsin conditions, either Bordeaux mixture or lime-sulphur in combination with arsenate of lead, properly applied,

FIG. 2.—EARLY CLEAN CULTIVATION PROTECTED THIS TREE

The development of leaf spot was checked by turning under the dead leaves in early spring before the fungus in them could discharge its spores. Early clean cultivation strongly reenforces spraying, but will not take its place. (Photographed July 27, 1916.)

will satisfactorily control leaf spot. In these experiments, however, lime-sulphur without arsenate of lead gave distinctly less satisfactory results than when the arsenate was added.

The time and number of treatments. Bordeaux mixture (4-4-50, that is, 4 lbs. copper sulphate and 4 lbs. stone lime in 50 gals., in 1916 and 3-3-50 in 1917) and lime-sulphur (1-40, that is, 1. gal. 33° B.—1.2946 sp. gr.—commercial concentrate in 40 gals.), both with arsenate of lead, were applied, approximately as follows: (1) when the blossom buds showed white, just before blooming, (2) soon after the petals fell, (3) about two weeks later, and (4) just after the fruit was harvested. On trees which received all four treatments, the disease was controlled excellently. Where the treatment before the blossoms opened was omitted, the control was as satisfactory as that which resulted from the full four treatments. When the second or third treatment was omitted, the control was not satisfactory and much foliage was lost. Where the last treatment was omitted, the result was practically as good as where it was applied. Both in 1916 and 1917, two treatments applied (1) soon after the petals fell and (2) about two weeks later, gave excellent commercial control. In some cases it may be advisable to make the application after picking the fruit, but ordinarily these two treatments, thoroughly applied and reenforced by thorough early clean cultivation, will be sufficient. They will not be sufficient if the work is not well done.

The timing of the first of these treatments is a very important practical matter. The greatest efficiency results when this spray is delayed as long as safety permits, because this ensures the covering of the greatest practicable amount of the rapidly increasing leaf surface. However, if the application is too long delayed, the disease will not be controlled. Our experiments show that in such seasons as those of 1915, 1916, and 1917, in all of which leaf spot was very severe, the first treatment may be made with safety at any time during the week after most of the petals have fallen. Where thorough sanitation is practiced and no important source of infection is near, this period may be slightly extended. Within these limits, the timing of the first treatment should be determined by the individual grower to meet his local conditions. In the larger orchards where spraying equipment is used at its full capacity, it may be necessary to work through the entire range of the safety period. The smaller orchardist who may wish to increase the effectiveness of his spray by a slight delay after the falling of the petals must take into account the possibilities of further delay by unfavorable weather conditions. In case unusually warm weather occurs during or immediately following the blooming period, the first treatment should be applied as soon as practicable after most of the petals are off.

The concentration of the spray. In 1916 and 1917 plats were sprayed comparatively with Bordeaux mixture, 4-4-50, 3-3-50, 2-2-50, and 1-1-50, and lime-sulphur, 1-30, 1-40, and 1-50. In each case arsenate of lead (powder, ¾ to 1 lb. in 50 gals.) was added to the fungicide.

Bordeaux mixture 3-3-50 and 2-2-50

FIG. 3.—LACK OF EARLY CLEAN CULTIVATION ALLOWED LEAF SPOT TO DEVELOP

This tree received no early clean cultivation. Otherwise it was treated as the tree shown in Figure 2, which was in the same orchard. Compare. (Photographed July 27, 1916.)

gave as satisfactory results as did the 4-4-50. Even the 1-1-50 formula gave a fair control in 1916 and a good commercial control in 1917. It is, however, too weak to be recommended for commercial use. These experiments show that the 3-3-50 formula may be recommended with full confidence for commercial use in Wisconsin cherry orchards. Even the 2-2-50 formula may be used with safety if good sanitation is practiced and the applications are thorough and timely. It will not be satisfactory, however, if the work is not well done.

FIG. 4.—UNSPRAYED TREE AT THE END OF THE SEASON

This tree lost its leaves in early summer. The fruit failed to mature and was a total lost, much of it hanging on until frost. (Photographed Sept. 29, 1917.)

Lime-sulphur, at all the three concentrations used, gave satisfactory results. As no injury resulted from the higher concentrations and the spray is relatively inexpensive, it seems best to use either the 1-40 or the 1-30 dilution. The 1-50 dilution is not recommended. Lime-sulphur 1-40 has been used more extensively in these experiments than any other dilution, and has given uniformly good results. In all these tests lime-sulphur was used in combination with arsenate of lead. When it was applied alone the results were less satisfactory.

Recommendations

No single recommendation can be made to meet the needs of all growers. The following program, however, subject to modifications to meet local conditions, should give satisfactory results:

1. **Give early clean cultivation.** Turn under the dead leaves in the spring as completely as practicable well before the blossoming period of the cherry. This will destroy a very large percentage of the "winter spores" of the fungus and thus strongly reenforce the spray schedule.

2. **Spray** with Bordeaux mixture, 3-3-50 (this formula should be modified to suit local conditions) or lime-sulphur, 1-40 or 1-30: (1) when the petals fall (timing subject to slight modification: see pp. 8–10, (2) about two weeks later, and (3), if necessary, just after the fruit is picked. In each application, arsenate of lead (powder, ¾ to 1 lb.; 1½ to 2 lbs. in 50 gals.) should be added to the fungicide. This controls chewing insects and increases the effectiveness of the spray against leaf spot. The applications should be thorough and timely, especially in the case of lime-sulphur, and care should be taken to cover the under as well as the upper surfaces of the leaves. If good sanitation is practiced and the first and second applications are thorough, the third treatment may frequently be omitted. Whether or not it should be applied is a matter to be decided by the individual orchardist in the light of local conditions.

DIGEST

Leaf spot is the most destructive fungus disease of the cherry in Wisconsin. Its control is necessary for profitable commercial cherry culture in this state. Page 3

The scarcity and high price of copper sulphate and labor make it highly important to improve control measures. Page 4

Early clean cultivation reinforces the spraying program by checking the development and discharge of spores of the leaf spot fungus. Pages 6–7

Two or three applications of Bordeaux mixture or lime-sulphur, with arsenate of lead, combined with early clean cultivation, will satisfactorily control leaf spot. Make the applications: first, soon after the petals fall; second, about 2 weeks later; and third, just after the fruit is harvested. The third application may frequently be omitted, but never the first or second. Pages 7–9

Weaker Bordeaux mixtures may be used where the spraying is thoroughly done. The 3-3-50 strength may be used with full confidence. With good sanitation and thorough application, even the 2-2-50 formula may be used with safety. Page 10

Lime-sulphur, 33° B. (1.2946 sp. gr.) should be diluted at the rate of 1-40 or 1-30. Add arsenate of lead (powder, ½ to 1 lb. in 50 gals.; paste, 1 to 2lbs.) to control chewing insects and to increase the effectiveness of the spray against leaf spot. Pages 7–11

Beans in Rotation.

Have raised potatoes and corn on a lot 60 by 60 ft. for eight years, —used only barnyard manure for fertilizer and want to raise beans for a change.

Q. Where can I get Navy Bean seed?

Ans. Navy beans sufficient for your 60x60 ft. lot can be had from any seedsman.

Q. Is there any particular kind you could recommend for Green County?

Ans. The common navy bean. There are no varieties.

I am of the opinion that your land is not well suited to navy beans. Beans do best on light sandy soil not very rich. Am afraid your beans would make more tops than beans on land that has been manured for 8 years even if potatoes have been grown. If you have a canning factory near would suggest tomatoes or sweet corn.

Wisconsin Horticulture

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THE SNAKE AND THE BEAST.

There are two kinds of cowards in Wisconsin today differing only in degree. One is the cowardly Snake, by the side of which the copperhead of the civil war would appear as a mere wiggling tadpole.

This class is composed largely of that small portion of our German population, who for reasons known only to themselves, lost to all sense of manhood or womanhood, of justice, right and decency see fit to be disloyal, seditious or treasonable.

Despised alike by the Germany they seek to serve and those of their own land, they persist in being loyal to the land of the Beast. These are to be found in every county, every city and town and in nearly every community in Wisconsin.

In the other class are those, who, regardless of birth or descent, are true Americans and yet are AFRAID. The ones who for fear of offending someone, who for fear of losing a miserable dime in trade or business, who for fear of being involved in unpleasant consequences refrain from stepping on these Snakes.

The time for soft words is past. Our boys are dying "over there." Hundreds of thousands of American Soldiers are now on the battle lines of France or waiting impatiently to go forward. They are brave boys every one, not afraid to die. They are there to fight for us, for the fathers and mothers, the wives and sweethearts they have left behind and the children of our land. They have gone to fight that terrible Beast that for almost four years has ravaged all of Europe and which, if not destroyed, will fall upon us. And we must fight for them. The poison of German propaganda paralyzed Russia and weakened Italy. Shall we permit it to destroy us?

To all of you who have a boy wearing the uniform of our country, whether he be here or in France, I appeal. Will you longer permit these Snakes to go unmolested? Will you, through fear or indifference allow this poison to spread, or will you do something to check it? All who are not for us are against us. Will you not have the courage to fight for your boy HERE as bravely as he is fighting for you over there? Wherever this Snake of disloyalty may be found, whether on farm, in business, in office, in pulpit or even in your home, strike it! Don't be afraid, our boys over there are dying for us. Shall we permit them to be attacked from the rear? If we do we are Cowards.

Frederic Cranefield.

The War Garden Campaign.

About the middle of January the Board of Managers of this society laid before the State Council of Defense a plan for a vigorous War Garden campaign in Wisconsin this year. An outline of this plan was printed in the February number of Wisconsin Horticulture. This plan was endorsed and at a recent meeting of the Council the Horticultural Society was given control of the whole War Garden campaign in the state.

This recognition of our society by the Council is indeed gratifying. We can all work now, members as well as officers, just a little better and a little harder on this account.

The work so far has been satisfactory in every particular. President Rasmussen, Mr. W. A. Toole, member of our Board of Managers, and Prof. Geo. F. Potter, of the Horticultural Department of the College, have been very busily engaged in lecture work since Feb. 18th and will not complete their schedules until April 6th.

Before planting begins over 60 cities and towns will have been visited by these men. Seventy thousand copies of circulars 1 and 2 have been distributed. Circulars 3, 4 and 5 are now in press and will be ready for distribution by the time this is read. Number three deals with raising and handling plants, transplanting, etc., number four, soils and soil preparation, and number five, seed sowing. None of these nor the remaining two of the series will be published in Wisconsin Horticulture. Application for any of these circulars may be sent to this office or the College of Agriculture, Extension Division.

A system of inspection of war gardens is now being planned and when completed will be announced in this paper. The Gardeners' Advisory Council of last year will be the nucleus and

around this will be built a more complete and thorough system of inspection.

The Barberry Menace.

We have an enemy in our midst that must be eliminated, the common or tall barberry.

By one of the strange provisions of nature the black rust of wheat is spread by this plant. Plant pathologists and botanists have known this for a long time, but as Wisconsin has not been much of a wheat state of late years other pests have seemed of more importance. Now that the wheat acreage in Wisconsin has been more than doubled since 1916 the barberry comes into prominence. Dr. Ball's circular reprinted on another page, tells the why and the wherefore.

A responsibility falls on the members of this society that none may shirk. We are responsible, in a large measure for the planting of barberry now let's turn in and destroy it, root and branch. We need wheat, every kernel we can grow will be needed and even a single loaf of bread more for our boys in France will be worth more than all the barberry bushes in the state of Wisconsin. Of course we will do it, freely and willingly. When the frost is out of the ground we will go out in the front yard or wherever the tall barberry grows and dig it out and when the job is done we will turn to the East and say, "all right, boys, it's out; what next can we do?"

Gladiolus bulbs may be started in the house now and set out when the weather is warm.

Growing Potatoes in Gardens and on City Lots.

By J. G. Milward
Wisconsin Experiment Station

It is not advisable to plant potatoes in gardens of less than 1000 square feet, as the space is more valuable for a succession of green crops. In larger gardens plans should be made to crowd potatoes closer together than is done in commercial planting, as in small gardens manures and fertilizers may be applied heavily and intensive working of the potatoes may be given with hand garden tools.

Garden Soils for Potatoes. Any well drained garden soil in Wisconsin will grow potatoes. The deep, cool, fertile, well drained, sandy loam soils are preferred.

Sod gardens, if possible, should be plowed or spaded in the fall. The sod should be well cut up and pulverized with a spade or other garden tool. It is advisable also to mix in a liberal dressing of stable manure. Course straw manure should be finely chopped up as spaded into garden. In the spring the soil should be well spaded again deeply, thoroughly pulverized and raked into a good level seed bed. The same intensive work should be given if manuring and spading is deferred until spring.

Old garden soils are more likely to grow scabby potatoes than new land. Ashes or lime in the land will increase the danger of scab. When potatoes are grown annually on the same garden, they should be shifted and rotated with other crops.

Commercial Fertilizers. Prepared fertilizers for potatoes may be purchased and applied at the rate of about 40 to 50 pounds for every 1,000 square feet. The fertilizer is usually spread over the rows after the potatoes are planted and then well raked in. It is also satisfactory to partially cover the potatoes with soil, spread the fertilizer in the furrow and then completely cover with soil. The fertilizer should not come in direct contact with the seed tuber.

Varieties. Early varieties such as Early Ohio or Triumph are best adapted to the garden as they will ripen for use late in July and in August before the main potato crop of the state is harvested. The Irish Cobbler is a round, white, early variety about ten days later than the Triumph. For general adaptability to gardens throughout Wisconsin for late variety, the Rural New Yorker is recommended. For cool, fertile, sandy loam soils in the northern half of the state, the Green Mountain is recommended.

Cutting Seed Pieces. Small potatoes from good fields, planted whole are satisfactory. Potatoes, however, are commonly cut into blocky pieces with at least one good strong eye to each seed piece. Small potatoes the size of hen's eggs may be cut lengthwise in halves. The best eyes on a seed tuber are at the seed or bud end and in cutting the tuber it is advisable to divide this cluster of strong eyes. The blocky type of seed pieces is preferred to thin, irregular slices.

Planting Directions. On good fertile gardens potatoes may be planted in rows two feet apart and the hills one foot apart in the row. The garden hoe is commonly used in planting. The hills are made four inches deep; the seed pieces dropped one piece to each hill and promptly covered with soil.. A special furrowing hoe or

garden plow may also be used to make furrows four inches deep and the seed pieces may be dropped about every foot in this furrow and promptly covered.

Sprouting Seed Tubers. Gardeners who desire extra early potatoes may desire to sprout tubers before planting by spreading them out in flats or boxes and exposing to light. Strong, stubby sprouts will start. The seed tuber may be cut carefully in order to secure a good strong sprout for each hill and if planted carefully such seed pieces will start into a strong, healthy growth.

Seed potatoes are commonly cut for planting as close to the planting date as possible, but the seed pieces may be kept for several days if protected.

Cultivation. After planting the surface soil should be raked with garden rake or cultivator. After rains the rake or cultivator should be used as soon as a crust begins to form. The soil should be worked and kept mellow around the young plants as soon as they come above ground. For small patches the garden rake is a useful tool for this purpose Level cultivation should be given at first but as the vines begin to cover the rows the soil should be worked up around the plants. Higher hilling is practiced on the heavier soils than on the sandy soils. Care should be taken not to cut into hills with hoe or other tools.

Control of Bugs. On small patches gardeners will be able to collect and destroy old beetles when they appear in the spring. It is also possible on small gardens to pinch off clusters of the orange colored potato beetle eggs which are laid on the under side of the leaves.

On larger gardens, however, where spraying is necessary the young bugs may be killed by the use of one tablespoonful of Paris Green to a pail of water. Apply with the common hand sprayer or atomizer. Paris Green is also applied satisfactorily in the dry form diluted to half strength with land plaster, flour or air slacked lime.

Gardeners who desire special directions for growing large areas should secure Wisconsin Experiment Station Bulletin No. 280.

Why We Send Our Wheat to Europe.

No question is more frequently asked than why we send wheat to Europe and stint our own people. The first answer is that we sent wheat to furnish a foundation for the mixed cereal bread that the Allies have eaten for three years and a half ,and not to supply them with a straight wheat bread. We are now eating Victory Bread, a bread that calls for only 20 per cent wheat substitute, while Europe since the outbreak of the war has eaten a war bread which contains from 25 to 50 per cent substitute. They are asking us for wheat enough to make this war bread.

Wheat flour is the only known foundation for a bakery loaf. Corn meal and buckwheat can be used in making cornbread and batter cakes but these breads cannot be looked on as bakery products as they will not stand 24 hours handling between the oven and the table. American women who do their own baking can make good use of cornmeal, rice and oatmeal, but wherever women work in factories or long hours in the field, whether in America or Europe, bakery bread must be within their reach.

Dr. Alonzo Taylor, representative from the United States Food Administration to the recent Allied Conference in Paris, and an expert on the food needs of the world answers the question in this way:

"We receive many letters at Washington as to why we want to send so much wheat to Europe when we are told that corn, oatmeal, rice and barley and rye are just as good. They ask, 'Why don't we keep the wheat and send them the corn and rye and barley and rice?' I will answer that: We want to send wheat to Europe because you can make bread of wheat, and you can't make bread out of rice and oats and corn. And nobody bakes domestic bread in Europe. You can go to any town in France and you will find that there are no individual bakers there. There will be employed probably two or three men in one place, who will have one large hearth, who will be able to bake 2,000 loaves of bread together, with a minimum amount of coal.

"This bread is delivered to the home; and this is one-half of the diet of that home. It was in peace time and it is now. In peace times there was considerable sugar, and dairy products were plentiful. Now these things are scarce and the bread largely takes the place of these foods. So the bread becomes of added importance from every point of view. Now just visualize this peasant home. Remember that the peasantry in France live in villages, not on farms, and they subsist on the small local store and bakeshop.

"Please remember that the coal

in France today is $110 and $135 per ton, and they have a good coal supply this year.

"Just visualize an American woman saying: 'If the corn, rye, oatmeal and barley are just as good, I will accept the wheat and send the wheat substitutes to Europe.' Remember that bread is made from wheat.

How much work is it for her to prepare rice or oatmeal or make corn bread? How much of a burden does it impose upon the overtime of the American woman today, either with or without servants? Very little. But it is a burden to a French woman, who is working sixteen hours a day and taking care of a maimed soldier, or a tubercular person, to deliberately put an hour or an hour and a half on her a day at boiling rice or making cornbread. Shall we put this burden upon her? This is the concrete situation."

General Planting Methods for Roses.

Planting methods for border and lawn roses apply also to practically all other roses. Stock should be planted as soon as possible after it arrives. When it is impossible to plant immediately, the plants should be placed in a trench and the roots covered. If the plant roots are dry when received soaking them in water an hour or more before this heeling-in is done is desirable. If the stems are shriveled, plumpness may be restored and growth insured by burying the whole plant for a few days. If the plants are frozen when received they should be placed where they will thaw gradually and should not be unpacked until there is no question that the frost is out.

More plants are killed by undue exposure of roots at planting time than from any other cause. No matter how short the distance to the permanent planting location, plants should be taken there with the roots thoroughly covered. The roots may be placed in a bucket of water while removing to the planting ground and until planting, or they may be puddled in a mixture of thin clay and then kept covered with wet burlap or other protection. Care should be taken that the clay does not become dry before planting. It is important to set the plants a little deeper than they were before. If planted too deep, however, the bark of the buried stems would be injured and growth would be checked until new roots form nearer the surface.

In planting dormant bushes it is desirable to trim the ends of broken roots and any that are too long just before they are put into the hole, so that there will be smooth, fresh surfaces which can callus and heal over. It is usual to have this fresh-cut surface on the under side of the root. The hole in which the bush is to be planted should be several inches larger across than the roots will extend and ample in depth, with a little loose earth on the bottom. The roots should be separated well in all directions, with the soil well worked in among them, separating them into layers, each of which should be spread out like the fingers of the hand. When the hole is partially full, the plant should be shaken up and down so as to make sure it is in close contact with the soil under the crown where the roots branch. When the roots are well covered the soil should be firmed. This is best done by tramping. If the soil is

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Will be glad to figure on your wants either in large or samll quantities.

Wauwatosa, Wis.

in proper condition tramping can not injure the plants. This will leave a depression about them, but all the roots will be covered.

When all are planted, each one may be watered, although this usually is not necessary, especially if the roots have been puddled before planting. If water is applied, permit it to soak in about the roots and then fill the hole with dry earth. Do not tramp after watering. With the soil wet it would be injurious to compact it more. If not watered the depression should be filled with loose earth the same as though it had been watered. After planting no watering should be done unless very dry weather follows, and even then care must be exercised not to overdo it till after growth starts. In watering, it is desirable to draw away some earth from about the bush, apply the water ,and after it has soaked in draw dry earth about the plant again.

A Mixed Lot of Questions and Answers.

Q. Is Senator Dunlap considered a good berry for shipping?

Ans. One of the very best.

Q. Would you recommend dwarf apple trees for a ½ acre orchard?

Ans. No. Dwarf apple trees are not worth growing either for home orchard or commercial use. The trees do not stand our climate as well as the standard nor last as long. After five or six years the dwarfs begin to go wrong at the roots. The stocks on which they are grafted are shallow rooted.

Q. Are Prof. Hansen's new plums superior in size and quality to our native plums like De Soto and Surprise?

A. None of the Hansen hybrids that the writer has seen equal Surprise in size or quality and surely do not excel De Soto. Extreme hardiness seems to be the main point of excellence of the Hansen hybrids.

Q. What grapes will stand Wisconsin winters without any protection?

Ans. Any of the grapes commonly grown in Wisconsin such as Concord, Moore's Early, Worden, Delaware, etc., will come through a mild or an average southern Wisconsin winter without any protection. An unusually severe winter will kill the canes if left uncovered. This is also true of raspberries and blackberries and the most successful growers practice covering all grapes and berries every year rather than risk the loss of a crop. This refers to the kinds named above and other natives. Agawam, Lindley, Wilder and other European hybrids demand winter protection every year.

Q. Is the St. Regis raspberry hardy in Wisconsin without winter protection?

Ans. There is no evidence that the St. Regis is hardier than Marlboro, Cuthbert, etc.

One Strawberry and Two Cabbage

What are the three best strawberries for shipping? I mean those firm enough to ship 100 miles or more?

Senator Dunlap, Gibson, Aroma.

(1) At what season shall I plant late cabbage to get best results and how store for winter?

Sow the seed from the 1st to 15th of May and set in the field from the 10th to 20th day of June, even later will do if season is favorable. Store on shelves in a cool, dry cellar. Cut cabbage in fall before real hard frosts and disturb as little as possible after placing in storage.

(2) Give distance for planting late cabbage in row and distance apart in rows?

Three feet between rows, 18 in. in the row.

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
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Reliable young men for farm and garden work. Will hire by the month or for the year. Write
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White Elm Nursery Co.

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Questions About Lime-Sulphur.

Answers by Dr. E. D. Ball, State Entomologist.

(1) How much lime sulphur will I need to spray 12 apple trees 15 to 18 years old from 20 to 28 ft. high and have had very little pruning?

Ans. For a dormant spray 6 or 7 gallons, and for a summer spray between 1 and 2 gallons.

(5) After lime sulphur has been diluted with water will it lose strength by standing for some time exposed?

Ans. Do not know.

(1) Taking both price and results to be expected into consideration, what will be the best spray "dope" for apples this year? For cherries?

Ans. Should advise Bordeaux and lead arsenate for cherries and for the pink bud spray on apples; lime-sulphur and lead arsenate after that on apples. The price of "dope" is a very small factor in the cost of producing fruit.

(2) Is there a sprayer on the market that is well suited both for

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KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

potato spraying and for orchard work?

Ans. There is no geared (traction) sprayer that is suitable for orchard work, but any orchard sprayer can be attached to the four row potato rig. If it was a double acting sprayer it could easily be geared to the rig for the potato spraying, but not for the orchard work.

It seems to be the general opinion that cranberry vines have wintered well.

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Arsenate of Lead

Paste or Powder
Lime Sulphur Solution

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As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity:
Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE", and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid for the "SCALECIDE".

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C. W. DAVIS, BOX 444
Madison, Wis.

Taxing Orchards.

Q. How should a young apple orchard, 4 years old not yet bearing be inventoried? As the trees are doing fairly well it is no doubt worth more than when it was first set out but since it is not bringing in any returns should it be taxed any higher?

Ans. The Federal Farm Loan Board ruled that no value should be placed on an orchard when appraising property for farm loans. Fruit growers of long experience approved of this ruling. This question was brought up at the biennial meeting of the American Pomological Society in Boston, November 1917 and fully discussed. Veteran orchardists from every part of the country, apple growers, peach growers and others were unanimously of the opinion that the ruling was sound. An orchard should be considered as a growing crop and not a permanent improvement. It may not be insured against the elements. It may quite as easily prove a liability as an asset. If the orchard is not to be considered of permanent value by the Farm Loan Board it certainly should not be subject to taxation.

Q. Have any Delicious orchards in this state produced profitable crops to date? At what age did the trees begin to bear?

Ans. I know of no Delicious *orchards* in bearing in Wisconsin. Reports have reached this office of a few trees here and there in the state 8 to 10 years old, some of which have borne fair crops. Summing up the scant information at hand the Delicious in Wisconsin seems to be late in coming to bearing, 8 to 10 years, not in the first class of hardiness, a rather shy bearer and fruit about one-half the size of Northwestern Greening.

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In 1913, Europe produced 43 per cent of the world's sugar; since then she has had other engagements.

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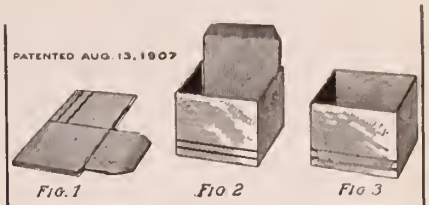

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They will go mighty good with the WAR BREAD. DUNLAP, WARFIELD and DR. BURRELL are all leaders. We have a complete assortment of Small Fruit Plants, Vines, Fruit and Ornamental Trees, Shrubs, etc. Our book Hardy Fruits and Ornamentals tells you about them and gives prices. It's free.

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WRITE FOR INFORMATION AND CIRCULARS

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, May, 1918 | Number 9

Children call them star flowers, a fitting name. When we say, "phlox divaricata" we display our learning,—perhaps. Somehow children always know more than grown-ups about sunshine and flowers and laughter and love of all that is beautiful.

Winter Injury to Cherry Blossom Buds.

Prof. R. H. Roberts
College of Agriculture

In general the troubles which affect a fruit tree are of interest to the grower only when they reduce the crop below a reasonable yield. As a result it is only every few years that more than passing interest is shown in the matter of winter injury to cherry blossom buds. While this trouble is common in Wisconsin it is seldom that the injury is sufficiently severe to cause a crop failure, as was the case in the winter of 1915.

When no injury occurs there is a normal thinning of the fruit after the blossom season to such an extent that only a relatively small portion of the total number of blossoms will produce fruit. It is not unusual, as in the past summer, that trees which had as many as half of their blossom buds killed during the previous winter will produce nearly a full crop of fruit. It is desirable that this injury should be prevented as the weather is not always finely enough adjusted to do just the proper amount of thinning of the fruit buds.

In order to get a better understanding of the nature and occurrence of this trouble, detailed studies of this problem were undertaken by the Department of Horticulture of the University.

A limited survey of the conditions existing in the Sturgeon Bay district this last spring revealed several points of interest in connection with the prevalence of the injury. While these are a matter of common knowledge to the growers they will be stated again in order to get the conditions clearly in mind:

1. Montmorency trees and young Richmond trees were very free from injury.
2. The vigor of the trees, as measured by the amount of growth, seemed to be the factor determining the occurrence of the injury.
3. There was less injury in the tops of the trees than in the lower parts.
4. Trees slightly defoliated with shot-hole showed less injury than trees with normal foliage.
5. The young trees and shot-hole trees were later in blossoming than the older trees.
6. Where injury is common, the shortest and longest spurs had less injury than spurs of average length.
7. The larger buds were most injured.

After a consideration of these facts it is apparent that immaturity of the trees is not associated with the occurrence of winter killing. In fact, the more vigorous, later growing trees were much less subject to injury.

Following a detailed study of the blossom buds a condition was found which was directly associated with the appearance of the trouble. This condition was the amount or degree of development which the buds have reached when the winter season begins. We may say, then, that the more developed the buds are, the more susceptible they are to injury.

From a study of the wood growth and fruiting habit of the trees we find that the relative development of the buds is in proportion to the amount of growth which the tree makes. As the amount of growth increased less bud development was found.

The trees which make an average terminal growth of about ten inches are very largely free from injury. This might be suggested as an arbitrary ideal to aim at in regulating the vigor of the tree with the object of decreasing the winter injury of the blossom buds. At least we are able to modify the relative development of the buds, and their consequent susceptibility to injury, by maintaining a vigorous growth of the trees. This vigor depends of course upon the cultivation, the soil fertility and the pruning.

Naturally we can expect the weather conditions of some seasons to be such that no injury will occur, or in other seasons that the injury will be severe regardless of the conditions of the buds in early winter. On the other hand, the present observations would indicate that much of the injury especially common to the older, weaker growing trees could be prevented by maintaining a more vigorous tree and thus prevent the extreme development of the blossom buds to the stage at which they are found to be very subject to winter killing.

It doesn't matter who started this war, Uncle Sam will finish it.

Conservation, concentration, and consecration—for the sake of those at the front.

Only a slacker could stand idly on the sidewalk and criticize as the army of workers marches by.

Our Garden.

Jennie Lindauer.

It is almost six years since our garden was first plowed. It is a little plot eighty-eight by one hundred and twenty feet commonly called a poor man's farm. Am sure any of you seeing it at that time would not have offered us much for our prospects.

To the soil already heavy with clay was added a generous amount from the basement. Three or four old rotted tree roots were dug up, all of which detracted from the appearance. But we, who were so blissfully ignorant of what all this meant, were perfectly happy, in the thought that in the spring everything could be arranged just as we wanted it. So during the winter we talked and planned much but studied seed catalogues more. When spring finally came we were ready to put in our whole garden the first fine day.

We planted pie plant roots, 3 gooseberry bushes, 10 red and 2 white currants, about 40 raspberries and 100 strawberry plants. This took about one-third of the ground allotted to garden purposes. Being very fond of vegetables of all kinds, we used over half of the remainder for that purpose. Then we must save space for nursery stock that had been purchased from agents who had camped with us at various times during the winter. This did not prove to be as much as as we had expected.

Of course all the flowers we had the first year were annuals and then only those which survived after the neighbors' cows, horses, ducks and chickens used them as a grazing field. However,we did have quite a showing that year in spite of all our tribulations and had made quite a start in our permanent bed.

One old gentleman who saw our vegetables in the fall told us that in the spring he would not have offered us ten cents for all we could raise on that garden. But we had all we could use during the summer and abundance to put in the cellar after giving away several baskets full.

Since then we have improved our soil very much by adding a generous amount of fertilizer and coal ashes. Nearly every year it has been dug up twice, in spring and fall, so that now it is much easier to work.

The last two years besides using all the berries we could in season we have canned about 20 quarts of strawberries, about the same of raspberries, and several quarts each of currants and gooseberries, besides making jelly. We have filled 100 quart cans, each of the last two years from our garden except about 20 cents spent for crab apples.

In spite of the fact that our strawberries were almost a failure this year, we have about 50 quarts of jam, jellies and sauce from our other berries, with a splendid prospect for late vegetables.

Perhaps many people would not consider it wise to plant so many flowers, but they have been a source of so much pleasure to us that we do not regret the space given them, are only sorry we have not room for more. Some of our friends seeing our love for flowers have made many valuable contributions until every inch is just about full.

After living in the city for so many years where we must buy all our eggs, we concluded to try keeping a few chickens. A space 30 x 40 feet was goven over to this purpose. Each year we raise from one to three dozen chicks.

Some time after we had been keeping them my mother said we paid dear for every chicken and egg we used. To make sure she was mistaken I kept a book account and found that we sold eggs enough to pay for all the feed, thus giving us our eggs and all the chickens we ate. This may seem a small item, but we feel repaid in having all the fresh eggs and chickens we want.

It may not mean so much in dollars and cents to have your own garden and chickens, but surely there is satisfaction in going to the garden for vegetables and berries and knowing they are fresh. And in these days of the high cost of living I believe it pays financially. To be sure, it means work and plenty of it, but most of us are better off for doing something.

We have had plenty of failures, some due to inexperience and some to weather conditions. From the former we have profited somewhat—but after six years of labor and some success we see just as much ahead that we want to do as we did the first year. and have come to realize that it will never come up to our expectations. But even with our failures it is home in the fullest sense of the word.

"To own a bit of ground, to scratch it with a hoe, to plant seeds and watch the renewal of life—this is the commonest delight of the race. The most satisfactory thing a man can do."

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Water Treatment for Blackhead Fire Worm.

Andrew Searls.

As the Blackhead Fire Worm seems to be inclined to give the cranberry grower trouble this coming season, it might be well to sound a warning and give some pointers about how to manage this troublesome pest.

The way I have doped this subject out is, there is only one way for the Wisconsin cranberry grower to combat him successfully, for if you attempt to get him with a poison or any other way by the use of a spray, you will fail to reach him in time to prevent him from getting in his work and doing your crop and vines a great deal of harm, beside the spray method being very much more expensive.

I have had several years' experience in treating this pest and and have always been successful in combating him.

I think it was twelve years ago this last fall I discovered quite a large patch of our vines had been severely injured by some pest. I had not noticed when the work was being done, but I could see if the whole bog was worked over as thoroughly as this particular patch (something like forty square rods) it wouldput us out of business for at least a couple of years. This looked serious. In walking among the vines on a fine sunny day, I noticed very many small brown flies or you might call them millers—they resembled millers—would rise and fly away a few feet and again settle down among the vines. I concluded these were the fellows responsible for the work and from their immense numbers, they would be likely to spread over the whole bog, and be laying their eggs for the coming season.

I had come in possession some time before of a bulletin on cranberry culture and among the papers sent, one on how to combat the Blackhead Fire Worm. The treatment advised, when the first crop of worms were hatched, which usually occurs in the last days of May, was to put the bog under water for a sufficient time to drown these young worms. It might take several floodings to get them, but this was the only sure method of protection. Consequently the next spring I was on the lookout for the appearance of the fellows. I think it was the 25th of May I made the discovery that the worms were getting busy. their first work seeming to be on the young growing buds and vines. We at once put our entire fields under water, covering every vine as nearly as possible. They were held submerged for thirty-six hours, the water was then drawn off and the worms examined and were found to be dead, all at least which we had been able to get under water.

We make a practice of giving our marsh each season a warm flood for safety, believing it will do no harm, and if there are any stray worms hanging around we will put them out of business.

Mr. A. E. Bennett also says the time to flood for fireworm is when he first appears in the spring—the trouble is, we do not see him—the worm generally comes out when buds begin to come out. Mr. Bennett covers entirely forty-eight hours and if water is cold can keep them under a week. **Get him first time or no good.**

On Sunday, April 7, Mrs. B. P. Clinton passed into the Great Beyond, leaving to mourn her loss a husband, three married daughters, several grand-children and a host of friends. Mrs. Clinton had been in frail health for some time and sought a more comfortable climate in the South—spending the winter with a daughter at Hydro, Oklahoma.

Funeral services were held Wednesday, April 10, at the Congregational church of Grand Rapids followed by interment at Forest Hill Cemetery. Mrs. Clinton was a christian lady of rare intelligence, refinement, and culture whose absence will be deeply felt.

The Cranberry Lake Development Co., of Price county, have had a crew of men at work this winter re-sanding their bog. This company have a large acreage planted in the best up to date manner, just coming into bearing. President Searls—whose is the guiding hand—is at this writing on the way to inspect the work done, and lay out work for the coming season.

The Cranberry Not a Waster

On receipt of the following protest by the Secretary of the State Cranberry Growers Association, an inquiry was sent to the U. S. Food Administration to learn if the cranberry had been placed under ban or in any way discriminated against. In a reremarkably short time the following telegram was received: "Food Administration has taken no action whatever in regard to cranberry"

From this the editor must conclude, and he believes a majority of our readers will agree, that their protest is not well founded. It doubtless arose from a misunderstanding. Sugar is required in cooking apples and yet the apple growers have not protested because the Food Administration has asked us to conserve sugar.

The market gardeners of Oshkosh and other places worked whole heartedly all season in promoting the back yard garden movement knowing they were working against their own interests, but none of them ever admitted it.

The allowance of sugar in France at the present time is 1 1/10 lbs. pr. month for each person, when it can be obtained at all. We consume over ten times that amount and surely we ought to be willing to help just a little to add to this pitiful 1 1/10 pounds.

"Through your columns I want to enter a **protest** against the concerted action now being taken by Chief Hoover and the Food Conservation Commission against the Cranberry. This movement is being disseminated throughout the land by the press, and is causing incalculable injury.

The reason given is the high price of cranberries and the shortage of sugar. Cranberries are not high in comparison to other fruits and foods and sugar combined with them will give a better account of itself than any place I know of. These gentlemen are earnest and zealous in their efforts to conserve food, and are not wittingly guilty of crime in discriminating against the cranberry. It is the old time-deeply-rooted **notion** that the cranberry requires more sugar than other fruits, and they have not taken the pains to find out beyond question, how unfair, unjust, and untrue this theory is.

Why not drop the turkey and all its accessories? Why drop any of them? Turkey is said to be plentiful at 30 to 35 cents a pound. With two-thirds the price of one pound of turkey, two and one-half to three pounds of rich cranberry sauce can be made without one atom of waste. If the waste of the turkey is considered—and should be—a much larger amount of sauce could be made. Instead of conserving with beneficent results, they are depriving humanity of an economical, appetizing fruit food and will ruin the men engaged in its culture. I hope the members of the Wisconsin State Horticultural Society who were convinced by my demonstration at the last December meeting, will have, and **eat**, cranberry sauce, not only on Thanksgiving Day but many, many, other days

Mrs. S. N. Whittlesey.

For cleaning fruit jars use steel wool numbers 0 and 00. Can be had at any paint store. Removes stains.

Mr. A. B. Roberts of Embarrass was over to Grand Rapids recently to consult with the cranberry growers of this vicinity regarding the re-building of his cranberry bog. Mr. Roberts has one of the best locations in the state for the growing of cranberries, and expects to put it in a first class, up to date condition.

May Restrict Importation of Nursery Stock.

The Secretary of Agriculture has called a public hearing, to be held in Washington May 28, at which will be considered the advisability of restricting the importation of nursery stock and other plants and seeds from all foreign countries. The restrictions are contemplated in order to prevent the introduction into the United States of any tree, plant or fruit diseases or of any injurious insects new to or not heretofore prevalent in this country. Many of the most important injurious insects and plant diseases have been introduced in this country through such importations. On the other hand there is a long list of similarly destructive insects and diseases which have not yet gained entrance.

Schizanthus Wisetonenis or Butterfly Orchid is a most beautiful annual that does not seem to be widely grown by amateurs. The dainty flowers fairly cover the plants with bloom. There is a wide variety of shades and markings but all of them pretty. They soon flower from seed but do not hold in flower long. A succession may be had by sowing seeds at intervals of a couple of weeks during the spring months.

Interesting and Valuable Information About Various Flowers.

(Answers by James Livingstone, Milwaukee.)

The leaves of a Sansveria Zeylancia dry and lose color after they are full grown; in other words, the plant appears to thrive for a time and then goes backward. Cause and remedy?

If the plant produces new leaves that develop satisfactory, it certainly is in a good growing condition; just why those leaves should dry and lose color can only be diagnosed by inspecting from top to bottom by a practical florist.

These plants are of easy culture providing you keep them warm and a moderate supply of water at all times. Keep the soil at the top cultivated a little to insure a free circulation of air, thus preventing the soil from getting sour. Also wash off the leaves, both top and bottom occasionally so the plant can breathe better.

Fern Culture.

Please give directions for care of ferns,—house culture. Leaves dry at tips.

The trouble of house ferns drying at the tips is not an uncommon one, yet in most cases it is unnecessary. This watering, or rather teasing with water every day, causes the inside of the ball of soil in the pot to become so dry that in the course of time it will shed instead of absorb moisture.

The following method will prove satisfactory. Submerge the pot containing plant into a receptacle filled with water and let it remain there for 30 minutes, about twice a week, that will carry them along without any further work in this line; if in a jardiner have the pot elevated so the air has a good chance to circulate. Location partly shady during summer months.

Asparagus.

Give general directions for culture of Asparagus Sprengerii as house plant.

Of all the house plants none is of such easy culture if given plenty of root room. Being a jardiniere have the pot elevated so rich soil which should be kept well supplied with water at all times. Either light or fuel gas is its greatest enemy. After all danger of frost is over it is advisable to plant out of doors in a partly shaded place. It will do well in either a warm or cool room.

American Beauty.

An American Beauty rose fails to bloom. The buds form but do not open; foliage appears as if scalded. Cause and remedy?

It is not an unusual thing for buds on an American Beauty plant to come blind, as the professional grower terms it, especially during the dark winter months, when the growing vitality is at low ebb.

The above case of failure to have good foliage may be due to red spider, which generally sit on the lower side of the leaf; would suggest repotting, to insure new root action using a fairly rich fibrous loam, and sponge the leaves about twice a week for some time, with clean water; give full sunlight at all times.

Aristolochia.

A Dutchman Pipe three years old has not bloomed. The plant appears to be healthy. What is the cause?

This is rather a hard question to answer intelligently. The plant may be healthy and yet may not have attained size or strength enough to bloom. The Dutchman's pipe is usually a hardy and vigorous growing vine and is not particular about soil. This vine should have a location in full sunshine, and in the writer's opinion needs very little care.

If the plant is growing too rapidly it might be well to cut back some of the long shoots, so that some of the vigor might be thrown in to produce flowering wood. The writer has had the care of a vine for over seven years. It is planted in very poor soil, has grown very slowly, never even been trimmed in all that time, and yet has bloomed profusely every year.

Cyclamen Culture.

Give general directions for Cyclamen culture as a house plant.

It is practically impossible to raise cyclamen from seed in the ordinary home, so it is presumed that this question relates to the case of fully grown plants as purchased from the florist. The cyclamen is one of the finest house plants after it is fully grown, all that it needs is intelligent care in watering and a sunny location in the window in the winter months, and it will bloom for a long time. When watering do not pour the water in the center of the bulb, or the flower buds and even the bulb itself are liable to rot.

Do not try to grow old bulbs the second year, very few florists do this, as they are seldom worth the trouble even in a greenhouse.

Matthew Crawford.

Matthew Crawford, a well-known horticulturist, for many years a resident of Cuyahoga Falls, Ohio, died at the home of his cousin, Mrs. M. J. McFarland, at Belle Center, Ohio, on April 2 after five days' illness of pneumonia. His funeral was held at Cuyahoga Falls on April 4.

Mr. Crawford was born in County Antrim, Ireland, July 5, 1839. His father died when he was very young, and, when he was about ten years old, his mother brought him and his younger brother to America. After a few months' residence in central Ohio, they moved to Cleveland. In the spring of 1854 Mr. Crawford began working for the late George H. Lodge, then a prominent market gardener of Cleveland, and from that time until his death he was a horticulturist. Though he continued to experiment with new varieties of vegetables all his life, his chief attention for many years was given to small fruits, especially the strawberry.

In 1863 Mr. Crawford married Ellen Knight, who at one time had been his teacher in school, though more than a year his junior. Two sons were born to them, William S., now an insurance newspaperman in Chicago, and Norman L., a gladiolus grower of Elyria, Ohio, who died March 16 of this year. In 1871 the family moved to Cuyahoga Falls, Ohio, where Mr. Crawford became gardener to George H. Lodge, his old employer, who had moved there. Soon afterward Mr. Lodge introduced the Sterling and Margaret strawberries, which he had purchased from Mr. Crawford, who originated them. Mr. Crawford had collected a number of new and standard varieties of strawberries and late in the Seventies he issued his first catalogue of strawberry plants and started the business in which he continued until 1916, when he sold out. During that forty years he originated several varieties and introduced many which afterwards became popular. His plant business was never large in volume, but consist-

MATTHEW CRAWFORD

ed mainly in selling new varieties to growers, amateurs and experiment stations. During that period he came to be recognized as an authority on the strawberry and its culture. He belonged to many state and county horticultural societies, wrote somewhat for the horticultural and agricultural press and published a book on strawberry culture.

Early in the Eighties he became interested in the gladiolus and soon made a considerable collection of varieties. These multiplied rapidly and he began selling bulbs. The demand soon outran his supply. He imported a number of varieties from Europe. He grew great numbers of seedlings, one year buying all the seed in this country and Europe available in quantity and planting fifty pounds of seed. He originated a number of the varieties now found in the choicest collections. He wrote a book on gladiolus culture, besides a number of articles for floral papers and for horticultural societies.

In his later years he disposed of most of his gladiolus bulbs and following the death of his wife in 1916 kept only a few thousand very choice bulbs. He had just shipped these to Belle Center and had gone there intending to spend the summer with his cousin when he was attacked by pneumonia.

Mr. Crawford was a horticulturist for the love of it. While he earned his livelihood by it, he was an experimenter more than a business man. He was a great reader of horticultural and agricultural literature and had a large store of knowledge of many branches aside from those on which he specialized. He was a member of the Methodist church for many years, but for over thirty years had been a Congregationalist. In young manhood he became a Mason. He helped organize the first Grange in Ohio. He was especially faithful as a member of the Summit County Horticultural Society, his home organization. He was a thorough workman, honest, strong in his convictions, kindly and generous to a fault.

Try cakes that call for honey or sirup instead of sugar.

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Plant Flowers in the War Garden.

Flowers will help win the war. We do not live by bread alone. We can't send the flowers to the boys in France, but we can tell them about our flowers. They will be glad to know that mother and sister or even dad have geraniums in bloom and that there is a bowl of nasturtiums on the dining room table just as it used to be.

Flowers won't take up much room and surely we will find time to care for a bed or border of blooming plants. We will need the fragrance, the beauty and the cheer their presence brings. Plant flowers in the war garden and elsewhere.

Sugar Beet Syrup.

It can't be done. A wise (?) theorist connected with the bureau of sugar investigations of the Federal Department of Agriculture wrote a pamphlet about it, the Literary Digest copied it, a lot of half-baked enthusiasts endorsed it, President Rasmussen knocked it and then the war was on.

Rasmussen was sure he was right and proved it. He made some syrup according to directions and sent the writer a sample. It tasted *sweet*, at first, but the after taste was like bed bugs. Tried it on the family cat, the cat lapped it all, and was ill, very ill.

Here is the beginning of the story. The wise sugar man at Washington advised every kid and every grown-up war gardener to plant a few sugar beets and next fall make sirup for family use.

Slice the beets in a barrel, pour boiling water over them, draw off the water and boil until proper consistency. Sounds fine but its a humbug. Here are the documents to prove it:

Mr. W. D. James,
Ft. Atkinson, Wis.

Dear Sir:—

I am sending you today a sample of sugar beet syrup made at home, strictly following directions in U. S. Government Bulletin on this subject.

From 40 pounds of beets, with 4 hours labor and 11 hours boiling we got 2¼ lbs. syrup or a trifle over a quart. As to quality—you may be the judge. As to purity—I am enclosing a copy of a letter sent to Prof. R. A. Moore by Mr. McCormick in reply to an inquiry about home manufacturing of syrup.

The raising of 40 lbs. beets.
Labor in preparing, 4 hours.
Fuel, 11 hours.
Sum Total, 2¼ lbs. syrup (Quality?)

I think this will convince Mr. Hoard and others that my statement "Do not grow sugar beets in the city garden. It is not practical," is not without foundation.

Sincerely yours,
N. A. Rasmussen.

March 7, 1918.

Prof. R. A. Moore, Agronomist,
Wisconsin College of Agriculture,
Madison, Wisconsin.

My Dear Mr. Moore:—

I have your letter of March 2, together with a copy of Mr. Andrews of Oglesby, Illinois, letter and note with some interest the statement of Mr. Andrews relating to manufacturing their own syrup from beets.

I have been engaged in the manufacture of beet sugar for 18 years, and while I have much to learn, I am obliged to say from my knowledge of the process, that it might be possible to make either sugar or syrup at home in a kettle by the same process that you would make maple sugar, but the home made product would retain all of the impurities which the plant takes from the soil; such a sugar would contain the potash and other salts which give the product the offensive odor and unpleasant taste and dark color which to a very considerable degree would make it unpalatable. The use of such syrup or sugar thus made

would most likely cause trouble with the digestive organs, because the excess of salts which the sugar or syrup would contain would have more or less of the effect of epsom salts.

In the manufacture of sugar in the regular factories, the syrups are thoroughly treated or filtered 5 or 6 different times, treated with 2 liming processes to get rid of the impurities, then treated with sulphurous gas to bleach the syrup, then boiled to grain, and then passed through centrifugals that travel at the rate of 1,200 r. p. m. which throw off the molasses and leave the granulated sugar on the inside of the screen, and while the centrifugals are thus revolving, water is sprayed on the wall so that the molasses may be thoroughly washed off the sugar grains. All of these processes are absolutely essential to the production of a pure granulated sugar from beets, and such treatment is impossible in any home-made processes.

The impurities that come in the manufacture of cane sugar is in the form of glucose, that is an impurity which prevents a certain amount of the sugar forming into grain, and is thrown off in the form of molasses, but the glucose is palatable and cane molasses are edible and really taste good.

I cannot conceive of our government advocating the home made production of sugar from sugar beets, I think it is the result of some theorist endeavoring to gain publicity in a line which he is entirely unfamiliar with.

With kindest personal regards, I remain,

Yours very truly,
G. W. McCormick,
Manager.

This is simply another case of theory without any practical foundation. The writer is not one who condemns the whole system of Federal agricultural investigations but there are so many cases like this that it makes one wonder if a general overhauling of the whole Department of Agriculture would not be a good thing. As a clearing house for investigation the department is excellent but as a source of information it is often a sad failure. Those swivel-chair farmers and horticulturists down at Washington are too far from the soil, altogether too far. They are, as a class narrow, impractical and too often visionary. The workers in the state experiment stations are nearer the soil, nearer the people and rarely make such stupid blunders as this beet sirup deal.

Don't plant sugar beets in the home garden with the idea of making sirup from them. It is impractical. Plant cabbage or rutabaga or parsnip and buy a can of Karo.

Arbor Day Proclamation.

Nature, always peaceful, always beautiful, again reminds us of the approach of springtime. The trees are budding, the flowers are coming forth and the birds are straining their sweet voices in their effort to please us with their song.

Let us give expression of our gratitude for the beautiful creations by planting a tree in some place where a mighty oak has fallen or a shrub for one that has withered for want of care, to the end that beautiful trees and shrubs shall not grow less and the bird homes shall not be destroyed.

May I be permitted to recommend to you, good people of Wisconsin, that this year when our country is engaged in a great war and we must give to our sons to it, that you plant an abundance of flowers. They will aid in dispelling the gloom or feelings of lonesomeness because of the absent ones, and for each son who goes to war let all who can plant a beautiful young tree to commemorate his going.

In accordance, therefore, with established law and custom, I, Emanuel L. Philipp, Governor of the State of Wisconsin, do hereby proclaim

Friday, the third day of May, 1918, Arbor and Bird Day.

And I recommend that the day be observed by the planting of trees, the adornment of school and public grounds and by the holding of appropriate exercises in all the schools of the state, to the end that the greatest possible advancement may be attained in harmony with the spirit of this proclamation.

Sweet peas may be planted as soon as the ground can be worked easily. It is often worth while to start a few in paper pots or boxes in the house and transplant later when weather conditions are settled.

Omit icing from cakes and fancy breads.

About Arsenate of Lime and Spray Pumps.

No. 1. Can arsenate of lime be used in place of arsenate of lead?

No. 2. Certain parties have hand spray pumps with long shanks for hose connections so that two or three clamps can be used. Also in the better hand pumps two vertical single-acting cylinders are used. Will such a combination enable me to penetrate farther into the tree and reach higher branches than with my $25.00 Goulds Pomona Pump?

No. 3. How many nozzles can be used with this combination and should they be single or double nozzles?

No. 4. Can I get a combined orchard and vine crop sprayer without getting a power outfit? With my Pomona pump the hose connections are always blowing off, also I do not consider we get enough pressure.

No. 5. Should trees be sprayed until they drip?

Answers by Dr. E. D. Ball, State Entomologist.

(1) Yes, arsenate of lime can be used as a substitute for arsenate of lead anywhere the latter is used. Arsenite of lime, which is more commonly used than arsenate, can also be used but about four pounds of fresh lime should be added to every 50 gallons of water, in order to prevent burning. This latter substance can be made at home.

(2) The double acting hand pumps, such as you describe, have a longer leverage than the Pomona barrel pumps and can therefore maintain a slightly higher pressure and will pump more liquid in a given time. There is no reason, however, why you should not reach the highest branch of any tree with a Pomona pump and do just as efficient spraying as with any other kind, —even a power outfit.

(3) Either a double acting or a Pomona pump should only have one lead of hose. This should be about 30 feet long and preferably ½ inch in diameter. To this should be attached one way cutoff and a 10 foot Bamboo pole, an angle, and a single Bordeaux nozzle for the driving spray, or a single "Friend" or other large whirling spray nozzle for cover sprays.

(4) The vine spraying attachment can be purchased separately and attached to the back of a wagon or cart, and the hose of an ordinary spray attached to this. Or, the outfit can be made at home with gas pipes and four Vermorel nozzles. This will make a better outfit than most of those in use, but will of course require a man to pump.

There is no reason why the hose should blow off a Pomona outfit. It may be that the hose you are using is too large for the coupling, or that your coupling has a poor shank. If so, one with sharp screw-like notches can be purchased for a few cents. A single clamp on this type of coupling should hold any amount of pressure. The most valuable feature of the Pomona pump is that it can be repacked so as to give perfect pressure at any time. If, after pumping the pressure up until the pump is tight, you find that the handle can be moved down or that the pressure goes down examine the valves and see that they are not leaking. If the valves are not leaking the pressure once pumped up should stay indefinitely and you should not be able to move the handle at all. If the handle moves, take off the collar around the cylinder, put in some new packing, which you can buy at any machine shop or hardware store, and screw the collar down tight, putting in a little oil. This should make the pump as good as new and should be done each year.

(5) When spraying for the purpose of coating the leaves with spraying compound care should be taken to have as little dripping as possible with perfect covering. By using the bamboo pole and the nozzle set on an angle, this can be done with little waste.

The spray on apple trees after the blossoms fall is largely for the purpose of driving the poison into the calyx cups. For this purpose a driving nozzle, such as the Bordeaux, should be used and the spraying should be continued until after each blossom has been covered, regardless of dripping.

The Pass Word—"War."

"We have got to reach the place, each one of us, where we define every decision in our lives as an act of war policy.

"Everything that we do, plan, eat, wear, must be analyzed and measured from one single point of view—will it contribute to the carrying on of the war, or will it contribute to its prolongation?

"There is no other thing in the world for us but to define everything in our lives as acts of military necessity or policy."

—Dr. Alonzo Taylor.

Treat Cucumber Seed.

Tests made during the past two years have proved that the angular leaf spot disease of cucumbers and probably anthracnose as well are introduced into new fields on the seed, says the United States Department of Agriculture. Dipping the seed in a 1/1000 mercuric chloride (corrosive sublimate) solution for five minutes renders the seed disease-free and has no injurious effect on germination. Since both diseases overwinter in the soil of diseased fields, however, it is highly important not to plant in fields which were in cucumbers the preceding season.

Treatment of cucumber seed can be done most advantageously by seedsmen and pickle companies before the seed is distributed to their growers. It is a relatively simple operation and can be easily done in the storage houses if running water is at hand.

Metal containers cannot be used for the mercuric solution. The highly poisonous nature of this substance should be kept in mind. Purchase mercuric chloride on the basis of one pound to every 500 pounds of seed to be treated. Make up a concentrated stock solution of a strength of 1/20 by dissolving one pound in two and one-half gallons of water. This stock solution is diluted to 1/1000 by adding one quart to twelve and one-quarter gallons of water. Stir thoroughly. For the treatment use a barrel, wooden tub, or large crock.

How to Treat Seed.

Place the seed in burlap or cheesecloth bags, fifty pounds in each bag. The bags should not be over three-quarters full to allow for swelling of the seed and to facilitate stirring. Immerse the bag of seed in twelve and one-half gallons of the 1/1000 bichloride solution and agitate vigorously with a stick to secure thorough wetting of the seed. Remove the bag promptly at the end of five minutes. Immerse at once in a barrel of running water and stir thoroughly. Wash about fifteen minutes. Dry the seed as rapidly as possible. Forced drying by a centrifugal machine or an air blast is much to be desired.

The bichloride solution should be used only once since its strength is greatly decreased. Make up a fresh dilution from the stock solution for every bag of seed.

To treat seed in smaller quantities dissolve one tablet of mercuric chloride in one pint of water for each half pound of seed.

Guard against reinfection of the treated seed. Bags to be used for treated seed should be soaked in the 1/1000 bichloride solution for at least five minutes, rinsed, and dried. Solution used once for seed may be used for this purpose.

Growers should not plant cucumbers in the same fields used in 1917 for cucumbers, watermelons, or cantaloupes, or on land immediately adjacent to such fields.

As far as possible, the department will undertake to send a representative to supervise the treatment of the seed where large quantities are involved.

Crown Gall on Young Apple Trees.

S. B. Fracker, Assistant State Entomologist.

The disease called Crown Gall may be found on apple nursery stock in the form of large lumps or knots on the crown and roots of the trees or in smaller lumps from which arise a large number of long, fine, thread-like roots. The latter form is known as "hairy root", but it is caused by the same bacteria as are responsible for the galls. This disease has long been recognized to be very injurious in the western irrigated orchards, but many nurserymen have claimed that it does little damage to trees in this part of the United States. The fact that an infected tree will survive and bear fruit, seems to be the principal basis for their claim, as it is often difficult to tell how much a tree is weakened by a disease or pest.

The writer made some observations on nursery-grown trees this fall in order to find out what effect the crown gall had on the young stock. It was found that in every nursery visited a much higher percentage of infected trees had to be thrown into the cull pile on account of small size and weak growth, than was the case with healthy trees. This was true of every variety examined. It appears from the results that the presence of galls or "hairy root" reduces the strength and size of the tree during its nursery life from 15 to 25 per cent. We are safe in drawing the conclusion therefore, that this reduction in the value and strength of the tree will be continued after the tree is transplanted into the orchard.

Buyers of nursery stock are warned to watch for infected trees, especially on material from nurseries outside the state, as it is not lawful to deliver these trees to customers. In case of doubt, send samples to the State Entomologist at the State Capitol who will appreciate any information sent in. S. B. Fracker,

Assistant State Entomologist.

A Common Language.

A common language is the first condition of a united people. If the members of a society cannot speak to one another they cannot reach that common understanding necessary to democracy.

In the United States that common language must be English. Because not all of our citizens can can speak that language and because of efforts made to maintain a civilization based upon other languages, we now find ourselves divided in the midst of a great war. In Wisconsin a large part of our present difficulties are due to the fact that our common schools have taught German to children who never learned English.

There is no good educational reason for teaching a foreign language in the grades. German was introduced and has been maintained in Wisconsin grade schools as a part of that German propaganda which helped involve the United States in this war and now weakens our fighting power.

The law permitting the teaching of German in the grade schools must be repealed. This is not making war upon a language. It is only insisting that the national language shall be the first to be taught in our public schools.

Many towns and cities in Wisconsin have already abolished German in the grades. But while the law remains on the statute books children in certain communities will be introduced to a foreign language before they will know the language of the nation in which they must live. The law permitting this must be repealed. The first test of loyalty and Americanism of every candidate for the legislature this fall should be a pledge to vote to repeal the law that permits the German propaganda to go into our schools and to divide our people.

Home-Made vs. Commercial Lime-Sulphur.

Reprinted from April, 1914, Wisconsin Horticulture.

As the time for spring spraying again approaches, this much discussed question perplexes many horticulturists. Whether it is better to purchase a commercial product of good grade at a fair price, or to prepare a compound of doubtful quality at a doubtful cost of time, labor and materials, is the debatable question.

Commercial lime-sulphurs are generally prepared under the best conditions with care and accuracy as to the quality and proportions of ingredients and thorough steam boiling. Most commercial lime-sulphur is prepared from the best calcium lime (94.98% calcium) obtainable, thus securing almost complete solution and combination with the sulphur.

Homemade lime-sulphurs, on the other hand, are generally made from the most available lime, which may be of low (calcium) quality and may contain a large percentage of magnesium, an element which will not combine with sulphur by boiling. Frequently the boiling is not thorough and the straining is carelessly done so that nozzles become clogged in spraying.

Wisconsin limes (with few exceptions) contain considerable magnesium, and for this reason our horticulturists are advised to use the commercial product. In case they have an analysis of a

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Native Plum Small Fruits
Apple
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White Elm Nursery Co.

Oconomowoc, Wisconsin

certain lime and know the percentage of calcium, they can add enough more lime to make up the required amount of calcium for the lime-sulphur formula.

The following formula leaves the least residue or sediment, and any amount may be boiled at one time using these proportions:

Lime (Fresh)	
If 95% calcium	19 lbs.
If 90% calcium	20 lbs.
If 85% calcium	21 lbs.
If 80% calcium	22 lbs.
Sulphur, good quality powdered	40 lbs.
Water (hot preferred)	25 gal.

Mix the powdered sulphur with water to a smooth, thin paste without lumps. Add the lime gradually to 10 gallons of hot water in the kettle (or barrel if steam for boiling is available) and pour in the sulphur paste during the slaking process, constantly stirring the mass. When the slaking is completed, add the full amount of water and boil carefully for an hour, preferably with a cover for best results, oc-

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A LARGE STOCK OF

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Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the bestthat can be grown in Wisconsin.

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Our Specialty: Planting and Developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

casionally adding a little water to compensate for the loss in steam.

Carefully strain the hot solution to remove all sediment and store in air-tight barrels or other containers. When ready to use, test with a hydrometer and dilute according to the following table. If any sediment has formed, strain the solution before diluting.

Are We Worthy of This Trust.

"I wish every man in this room could go to the battelfield of France, could go to the front, not merely to see what a front looks like, with its trenches, its men and all of the paraphernalia, but to get the reaction of the French common soldier toward the Amer-

FOR SALE

Choice Strawberry Plants in large or small quantities. We make a specialty of Warfield and Senator Dunlap, Wisconsin's standard varieties. We also have the leading varieties of Raspberries. Write for price list.

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Oshkosh, Wis.

Arsenate of Lead
Paste or Powder
Lime Sulphur Solution

Recognized as standard in principal fruit growing sections of the country. Convenient source of supply for Wisconsin fruit growers. Sulphate of Nicotine 40% and free Nicotine 40%. For further information write

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

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Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

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Manufacturers of the celebrated "Silver or White Birch" berry boxes, and American quart baskets, crates, climax grape and peach baskets, Jumbo baskets, till or repacking baskets, tree protectors, plant boxes, bushel and half bushel crates, box shooks and specialties.

Write for circular and price list.

SHEBOYGAN FRUIT BOX CO.
Sheboygan, Wis.

Free!

A 50-gallon barrel of Scalecide free to any any one who will suggest a *fairer* guarantee than that given below.

"SCALECIDE"

As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity:
Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE", and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECIDE".

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ican visitor. These men who have faced death for three and a half years for you and me, fighting a battle in which we have just as much at stake as they have—these men salute an American civilian with an expression of respect, reverence and trust that is absolutely past description by human words.

Why do these French soldiers who have struggled with death for freedom for three and a half years salute the American? Because in that salute they express their trust in America in the war; they express the trust in our assuming our share of this struggle from every point of view, not merely by governmental participation in a military program, but also by the reconstruction of our entire lives from the point of view of saving and sacrifice, by supporting them in the same sense that the American boy who fights beside them, supports them, and is supported by them.

Now, we, gentlemen, must be worthy of this trust, and when a French soldier salutes an American civilian and he knows that that American is merely one typical of a hundred and five million, he expects us to do our duty as an ally, and he knows we will do it! The people of France know that the American people are being asked to undergo food conservation and they know that the man who asks them to undergo it is the man best qualified in the world to lay out a program—the Hoover of northern France and Belgium and now the Hoover of the United States."

Many farmers and growers are considering planting an acreage of navy beans this year because of the high prices paid for them this season. Beans have this advantage that they may be kept over a season if the price is not right for sale. They are comparatively easy to grow and will yield from eight to fifteen bushels to the acre.

A BARGAIN

Myers Special Power Spray Outfit consisting of:

1 Duplex, back geared, vertical cylinder, double acting, pump, brass fitted thruout, cat. No. 446.
1 Cypress 100 gallon tank.
1 I. H. C. Engine.
50 ft. hose, rods nozzles, etc.

This rig has never been in use. Bought at horticultural convention 2 yrs. ago for demonstration. A three hundred dollar outfit to-day.

Price F. O. B. Madison $180.

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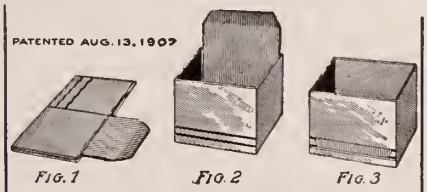

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Cumberland Fruit Package Company

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Quality Limestone

Is recognized superior to all other for

HORTICULTURAL AND AGRICULTURAL PURPOSES

We Grind a Limestone for Every Soil

We have the Limestone. You have the Land. Unless the two are connected, we both lose.

SPECIALTY
No. 200 Dehydrated Limestone for Spraying.

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The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

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this month and pick berries in September and October

They will go mighty good with the WAR BREAD. DUNLAP, WARFIELD and DR. BURRELL are all leaders. We have a complete assortment of Small Fruit Plants, Vines, Fruit and Ornamental Trees, Shrubs, etc. Our book Hardy Fruits and Ornamentals tells you about them and gives prices. It's free.

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Cream City Arsenate of Lead has a maximum killing power, sticks longer, no lumps, or sediment; therefore gives the highest efficiency and greatest economy.

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WRITE FOR INFORMATION AND CIRCULARS

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, June, 1918 | Number 10

"Water-lilies or Nymphaeas are among the most royal, gorgeous, diversified and universally admired plants in cultivation."—*Sturteva*
We have here Nymphea odorata common in Wisconsin.

The Possibilities of Dusting

Prescott J. Mitchell

For some time past, those interested in the production of clean fruit have felt the need of something to supplement the usual spray outfit in controlling fungous diseases, such as the apple scab, which come as epidemics, often at times when the spray rig cannot get onto the wet orchard, and which usually must be controlled within a very short time, or not at all.

There have been occasional epidemics of insect pests, also, which the slow, heavy spray rig could not check, and these have also given the commercial fruit grower some concern.

Now a machine which is ideally adapted to meet such sudden demands, and one which is best fitted to apply fungicides, and insecticides rapidly and thoroughly, is the duster.

No doubt most of you have read of the duster in the farm papers, but in case you have not I will say that a duster is a very simply-constructed machine, with a rotary fan, driven at high speed by a gasoline engine, producing a strong current of air which passes through a six inch galvanized-iron tube, or in the later models, through a huge rubber hose a good deal like the familiar air-brake hose, and the finely ground material is carried by the gust of air onto the foliage in a dense cloud, which settles down over the trees, the fine particles settling in between the small hairs on fruit and foliage and adhereing.

The duster applies the materials in the form of a finely ground dry dust, and, operating without the tank of water which the spray rig must have, is about a ton lighter and hence can go on the land regardless of moisture conditions. Moreover, the dust adheres about as well when applied to damp foliage as when the trees are perfectly dry, so that a duster can operate immediately after a rain or in foggy weather when a spray-rig would be forced to wait for the trees to dry.

The time consumed in filling and refilling spray tanks is costly, and many a fruit crop has been ruined because the source of water was so far from the orchard that the spraying could not be done within the time allowed by weather conditions.

Another factor in the time required is the rate of application. We all know that it is necessary to stop at each tree in order to get a thorough application in spraying; but unless the trees are unusualy large, say over thirty feet high, the duster may be driven along at a slow walk, and yet a thorough application will be made. This is because the dust is so finely distributed, for a veritable fog envelopes each tree, and the particles sift down gradually until the entire tree is covered.

Considering these three factors then, the weight of the outfit, the time required to replenish it, and the rate of application, it is not hard to believe the statements of those who have actually done the work when they say that the duster is at least eight or ten times as fast in operation. There is another factor worthy of some consideration,—the mechanical troubles.

The duster which I used the past season is the same model as that used by the Cornell Experiment Station, and to my personal knowledge there has been almost no mechanical trouble with any of these machines. The duster which I used covered over three-hundred acres in two weeks the past season, and was driven from one farm to another over rough roads, covering, probably, about sixty miles over roads that would have left a spray rig pretty badly shaken up.

Freedom from nozzles, hose, and suction pumps which alternately leak and clog with dirt—that's what a duster means!

The materials used in dusting have undergone some radical changes in the course of the experiments, and are now ground as finely as possible. The sulphur is ground to pass a 200 mesh sieve, and the poisons are also somewhat finer than those used in spraying. The past season's work showed that the tobacco dust used was not sufficiently fine, and better control of sucking insects is hoped for with the material now being prepared.

Besides the better distribution obtained with the finer material, less actual sulphur is needed, and the cost of materials is thus somewhat reduced.

Due, probably, to the breaking up chemically of the compound serious burning is often experienced in the use of lime sulphur after the leaves have come out; this burning is unknown with the dust, and for this reason applications may be made at a later period with the dust than would be possible with the spray.

The Cornell University Experiment Station has carried on field work in dusting since 1911, and the results obtained in these experiments prove conclusively that dusting will control chewing insects; that it is probable that tobacco dust will control sucking insects, as soon as a way can be found to prepare it more finely ground; and that even San José may be controlled in time when the difficulties of preparing soluble sodium sulphur dust can be

overcome. There remains, however, apple scab to be controlled; at present it appears that heavy infections of scab cannot be controlled by the dust, although in some rare cases light infections were checked.

So it seems that before discarding the spray rig entirely, we must wait until the duster is more completely developed. But the duster has one field of missionary work where it will perform good service —that is in the home orchard.

The commercial fruit growers all over the country have long tried to get the men with a small home orchard to spray, and a good many of these men would spray if they thought the cost of machinery, the time and materials, and the upkeep on the machinery would not overbalance the slight good they would derive from spraying.

Now there is no excuse left for them, for a duster requires very little time, practically no repairs, and the materials are comparatively inexpensive. Depending on the size of the machine, the price of dusters ranges from twenty five dollars for the hand duster used on small trees and potatoes to ninety-five dollars for the large duster with a capacity of forty acres of thirty foot trees per day.

Any ordinary gasoline engine will run a duster, the large duster requiring about three horsepower, possibly less.

In conclusion, I wish to say that there is considerable difference of opinion as to the merits of dusting, and even some of those who have used the dust are inclined to be skeptical. Each season brings new developments, and not until the materials have undergone greater refinement will the dust give maximum results.

Cutworms

The cutworm is a vicious and contemptible insect. In fact no name seems fitting to the gardener who climbs out of bed very early in the morning to hoe his tomato or cabbage plants to find that Mr. cutworm got up earlier still and attended to the plants. If cutworm injury were confined to eating a leaf or two one might forgive the beast but to completely sever the plant, cut off clean as with a razor and apparently without purpose, why that's sheer cussedness.

Prof. J. G. Sanders, formerly state entomologist, has this to say about cutworms:

"About the time that young plants are pushing through the soil they are found cut off even with the surface of the ground, the wilted top usually lying near the beheaded root stalk. Corn and other field crops suffer the same fate. As a rule, the worms themselves are nowhere to be seen; but if one removes the soil to a depth of an inch or two near a dead plant, one will likely find a dark, naked worm, lying curled up and motionless."

"There are many species. The worms differ in markings, but their work is much the same. They are the larvae of night-flying moths of the family Noctuidae. Their parents are on the wing in July and August, laying eggs in fields that are grown up to herbage of almost any kind. A field that has been allowed to run to weeds is favorite ground. The young worms that hatch from these eggs feed for a few weeks in the fall, and then hibernate in the soil. In the spring they resume activity, and after the ground has been plowed and seeded, they are ready to destroy the first green plants that show up."

"In large areas, cultivate thoroughly in late summer, keeping the ground free of weeds, and plow deeply in the fall, following this with early cultivation in the spring."

"In the garden injury may be avoided by the use of poison bran mash in the spring, scattering it over the ground before the plants are due to come up. The worms will then be killed before they have done any damage. Tomatoes, cabbages, and other large plants may be protected by fitting a collar of paper around the stem, setting it two or three inches into the ground, and letting the upper edge be three or four inches above the surface. The formula for poison bran mash is as follows:"

POISON BRAN MASH

Bran .....25 pounds
Paris green ..... ½ pound
Cheap molasses ..... 1 quart
Water as needed to moisten.

For small quantities use:

Bran .....1 quart
Paris green.....1 teaspoonful
Cheap molasses....1 tablespoonful

Water as needed to moisten.

The war calls for the team work of soldier son and soldier father—the hero of the trenches and the hero of the furrow.

This is your first chance to defend the flag—go the limit.

Yes, they are holding the line, but the folks back home must bring up the reserves.

Production and self-denial are the guns that will get the Huns.

Cranberry Items for June Horticulture.

SPRING KILLING.

Although cranberry vines seemingly wintered well there is now on a number of marshes in Wood county quite an apparent loss by spring killing. Upon careful investigation this seems to be caused by keeping the water off too long in the cold, raw, springtime, while the peat and vines are solidly frozen. It has been the custom of our most successful growers to draw the winter flood off early in March, leaving the bog in a frozen state to keep the vines dormant. About the tenth of May a new flood is put on to take out the frost and start growth. It now develops that where the bog is frozen to the top for so long a time—moisture cannot reach, or be carried to the top roots and vines—consequently vitality ceases. Where frost was out an inch or more from the surface, the vines carried through in fine shape. It will be wise in the future to watch conditions closely, and re-flood if necessary till frost is taken out to this depth before keeping the bog so long uncovered.

MAIN WORK

Mr. C. D. Searls says "During May the two most important things to do is to get the frost out of the bogs by flooding, and then, after the water is drawn down, to look for the black head fire worm." Treatments for destruction of this pest were given in the April and May numbers of Horticulture. Most growers at this time have ample supply to use the water method as published in the May issue.

The Belle Lake Cranberry Co., report finding some very small worms on their vines at Valley Junction May 17—a very early period. This marsh we believe is one of a number that suffered heavily last year from the ravages of the fire worms.

The Bonnie View Cranberry Co., at Water Mills of which our Mr. O. G. Malde is manager, is doing quite a lot of work on their high lands as well as cultivating and re-planting their cranberry marshes. During the past winter they cleared several acres of land and put up 200 tons of ice. They now have nearly 100 acres planted to corn and other grains.

Messrs. Jacob Searls of Grand Rapids and Elmer Dano of Tomah recently attended a Directors' meeting of the American Cranberry Exchange in New York City. The reports of last year's work were very satisfactory. All the old officers and directors were re-elected except that Mr. Searls was made 2nd vice president to fill the place of H. R. Laing of Berlin, resigned.

Cultivating and Fertilizing With Water.

Experiments in New Jersey have developed the fact that by the proper, judicious use of water, much labor can be saved in keeping the bogs clean, give the vines a rest and opportunity for vigorous growth, and overcome other vegetation. Where vines are weak, old, or thin, or where there is an unusual amount of grasses, weeds or foreign vegetation, it seems to have been demonstrated that by keeping the vines under water until about July 10th to 15th, taking the water off just in time to permit the vines to grow and bud for the next season's crop, has the effect of killing down other vegetation, giving the vines a rest and renewed vigorous growth, whereas the foreign vegetation dies down, giving the vines a material advantage over it and driving much of it out. One of New Jersey's successful growers is now following this plan by keeping one-fifth of his total bog area under water every year, thus practically renewing his whole bog once in five years. This has greatly increased the size of his berries, his total yield, and reduced the expense of weeding and cleaning. Where bogs are unusually grassy and weedy, it seems to have been advisable to even follow this up two years in succession, or some argue, keep the bog under water the whole season. By taking the water off in time to permit the vines to grow and bud for the following season only loses one crop. Quite a number of experiments along this line seem to have proven very successful. July 10th in New Jersey seems to be about the proper date to take the water off, but a different date might be necessary in Wisconsin. Some experiments along this line should be tried out.

So long as the boys are at the front, difficulties are to be subdued, impossibilities to be trampled down.

War is an ugly thing but a German peace is uglier—Russian farmers are producing German food.

The Imported Cabbage Worm In Wisconsin

By H. F. Wilson; L. G. Gentner,

University of Wisconsin, Madison, Wis.

There is a general belief among Wisconsin canners and growers

Young unsprayed cabbage plant showing injury from cabbage worms. (This and following pictures by courtesy of Prof. H. L. Wilson, Agr. College.)

that it is dangerous to use cabbage that has been sprayed with poisons of any kind. Both canners and growers recognize the fact that the cabbage worm is a serious pest but the growers have not been free to use essential combative measures because they consisted of spraying with arsenicals.

Other investigators have already shown that cabbage sprayed with arsenicals may be eaten without danger to the consumer but in order to more thoroughly convince Wisconsin growers of these facts, the investigations from which the included data was secured were planned.

The life-history work of two seasons has shown that there are three distinct generations each year and sometimes a partial fourth. There is normally more or less overlapping of generations, especially toward the latter part of the season. The maximum emergence of adults from overwintering chrysalids occurs somewhere from the first to the middle of May, depending upon the season. The maximum emergence of adults of the first generation occurs during the first two weeks of July; and of the second generation during the first two weeks of August.

In the southern half of the state generally speaking, both early and late cabbage are grown while only late cabbage is grown in the northern sections. The early cabbage usually matures without much injury from the cabbage worm, but the late cabbage is often seriously injured and as many as 35 per cent to 40 per cent of the heads may be made unfit for market. In very severe cases entire fields are wiped out. In the northern half of the state the late cabbage sometimes matures in good condition without a single application of spray while at other times the losses are very serious.

In the experiments carried on at Madison during the past year

Longitudinal section of cabbage head injured early in the season by the cabbage worm.

the following insecticides were used: Paris green, lead arsenate (powder and paste), zinc arsenite, calcium arsenate (powder and paste), tobacco dust and finishing lime. When applied in the liquid form the sprays were applied at the rate of one pound of the powder or two pounds of the paste to fifty gallons of water. The following materials were used as "spreaders" or "stickers:" common yellow laundry soap (resin)

Longitudinal section of uninjured cabbage head.

at the rate of one or two pounds to fifty gallons of spray; molasses at the rate of one or two quarts; and molasses and lime at the rate of two quarts of molasses and three pounds of lime to each fifty gallons of spray used. When applied as a dust spray, the materials were diluted from three to ten times by weight with lime.

The results of the experiments showed that Paris green (this was used only in liquid form), lead arsenate and calcium arsenate gave entirely satisfactory control, while, contrary to expectations, zinc arsenite failed to give control in any of the four plats to which it was applied. In fact some of the plats sprayed with zinc arsenite were practically as severely injured as the unsprayed check plat. In comparing the liquid sprays with the dust sprays, results showed that the liquid sprays gave slightly better control

than the dust sprays due to the fact that the latter were more easily washed off by the heavy dews and rains. Tobacco dust and lime seemed to have practically no effect upon the cabbage worms.

Common laundry soap used with the liquid sprays at the rate of one pound or more to fifty gallons gave far better results than where either molasses alone or molasses and lime were used, due to the more even distribution of the poison in the case of the former.

From one to two applications of spray are generally used to combat the cabbage worm. Ordinarily one application made a week or ten days after the butterflies appear in large numbers in July and another in August will give satisfactory control.

In order to determine whether or not there is any danger of poisoning to the consumer from the use of arsenicals, one head from each of six sprayed plats and one head from the check plat were analyzed by the Agricultural Chemistry Department of the University. The plats from which these heads were taken had received five sprayings, the last spraying having been applied about a week before picking. In preparing the heads for analysis, only the outer leaves were removed as is done by the grower, then one more layer of leaves was removed to correspond to those taken off by the housewife.

Conclusions: While Paris green gives efficient control the cost is too high for economical use. Lead arsenate and calcium arsenate at the rate of one pound of the powder or two pounds of the paste to fifty gallons, with the addition of one pound or more of common laundry soap, give efficient control and are the most economical to use.

No trace of arsenic was found to be present on sprayed heads prepared for cooking even when sprayed as late as a week before picking. The outer leaves may carry enough arsenic to poison stock and are therefore dangerous to use for that purpose.

Control of the Striped Cucumber Beetle

University of Illinois Agricultural Experiment Station, Urbana, Illinois, May, 1918.

Circular No. 220

By H. D. Brown

The striped cucumber beetle is one of the most familiar garden insects, and one of the most destructive, with which vegetable growers must contend. The injury done to cucumber, squash,

The striped cucumber beetle, enlarged 5 times.

pumpkins, watermelon, and muskmelon vines by this pest is often the cause of the failure of these crops. Besides the damage which the beetle and its larvæ do directly to the plants, the adult beetles are spreaders of a bacterial wilt.

LIFE HISTORY

The adult beetle hibernates in the fall under rubbish or boards, or in the ground. These beetles emerge in the spring several weeks before the cucurbitous, or vine crops appear. During this time they feed upon a wide range of vegetation, but congregate immediately upon any vine crop which they may find. They feed ravenously for five to ten days on the vine crops, regardless of any poison which may have been applied to the plants. After that they begin to pair and refuse to eat any portion of a plant protected by insecticides.

The eggs are laid the latter part of June and during July and hatch in about ten days. They may be laid wherever the beetle is feeding, but will not hatch unless deposited in a moist place.

The larvæ likewise require moisture, and will soon perish if forced to remain for any length of time in contact with an extremely dry soil. Consequently they are likely to be found at the base of the plant along the stem, and upon the fruit where moisture is available. They are about three-tenths of an inch long, white, with dark brown head and anal plate. The larvæ feed for about a month and then pass into the pupal or resting stage.

The adults begin to emerge about the first of August and continue until the latter part of September.

Injury

The greatest injury is done by the adult beetles. They may either totally destroy the small plants soon after they appear above the ground, or they may eat sections from their bases, so weakening the plants that they are easily destroyed by winds. Later they congregate on the blossoms and destroy the pistils and pollen, and seriously interfere with the setting of the fruit. It is at this stage that injury by bacterial wilt is usually noticed.

Bacterial wilt is carried from plant to plant by the mouth parts of the insect; the twelve-spotted cucumber beetle also carries the infection in the same way. No other means of spreading this disease is known. A plant wilts down in a few days after infection. The wilting is presumably caused by the growth of bacteria in the vascular tissues, which eventually shut off the water supply from the upper portion of the plant.

The larvæ also do considerable damage, when they exist in large numbers, by feeding at the bases of the plants, by tunneling up into the stems, and by feeding upon the fruits. An attack of the larvæ at the base of a plant may cause the plant to wilt, and the death of a plant caused by larvæ in this manner is often erroneously attributed to bacterial wilt.

Control

The logical time to begin the fight against the beetles is in the fall several weeks before they go into winter quarters, for it is these beetles which emerge in the spring and cause all the damage to the crops.

In the control measures outlined in the following, no special remedy is suggested for bacterial wilt; there is no known remedy, except to control the beetles which spread the disease.

Control Measures During the Fall

The control measures during the fall are based on the fact that the beetles at this time exhibit a great greed for food. After the main vine crops have been killed by the first frost, large numbers of the beetles can be poisoned by completely covering with poison a few squash vines which have been protected from the frost. Hubbard or Boston Marrow squash plants are the best to use for this purpose, as the beetles prefer these to any of the other vine crops, including other varieties of squash.

The poison may be dusted on the plants in the morning while the dew is on, or it may be applied in the form of a spray. If dusted on, it is best to use powdered arsenate of lead, for Paris green is liable to injure the foliage. If applied as a spray, the solution should be of double strength. Four pounds of the paste or 2 pounds of the powdered arsenate of lead should be used to each 50 gallons of water. Paris green when applied as a spray should be used at the rate of ½ pound to 50 gallons of water. Paris green should be added to freshly slaked lime and the mixture diluted to the proper proportion. One pound of fresh stone lime should be used with each half pound of Paris green.

Another method of killing the beetles in the fall is to leave a number of immature Hubbard squash scattered about the field. The beetles will congregate on these in great numbers after the vines have been killed by a slight frost. Early in the morning while it is still cool, many of the beetles can be collected by picking up the squash and brushing the beetles into some receptacle from which they cannot escape. They will make very little effort to fly away when they are stiff from the cold.

Large quantities of squash bugs and of the twelve-spotted cucumber beetle will also be collected in this way, as they congregate in the same manner. As the two latter insects spend the winter in the adult stage, their capture is a valuable means of control for two more destructive cucurbitous pests. The writer has collected several quarts of a mixture of these three insects on different occasions, in less than fifteen minutes. Small boys could render valuable service in this kind of work. The principal objection to hand picking is that a few of the beetles will still feed upon the partly green stems of the old plants and of course will be missed. This can be overcome to a certain extent by raking up the old vines and immature squash on piles of dry straw. After the beetles congregate, which will take a week or ten days, the vines may be burned. The straw placed under the vines hastens the burning so that few of the beetles escape. Dry straw placed over the top of the pile at the time of burning is an advantage. A few immature squash scattered over the field after the burning afford a means of collecting any beetles which have escaped.

Control Measures During the Spring and Summer

In the spring the method of control for the first five or ten days after the beetles appear on the plants is essentially the same as the method of applying poison described for the fall treatment. Advantage is taken of their ravenous feeding habit during this period by applying poisons to the crops upon which they are feeding. If cucurbitous crops other than squash are the main crops, it will be advisable to apply the poison to a trap crop of Hubbard squash, driving the beetles from the main crop with air-slaked lime or Bordeaux mixture. The beetles naturally prefer the squash plants,

(Continued on page 153)

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Pussy

Dear little pussy! Just look at the dear little creature climbing the tree, how cunning she is! Shall we permit her to climb the tree? Not on your life! Get a gun or lacking that, a rock of suitable size or a little arsenate of lead on a piece of meat. Because if we let pussy climb the tree the dear little devil will kill every robin, catbird or other song bird in the tree. If you don't believe that your own dear pet pussy will do such a thing watch her and you will be convinced.

WHY WE FIGHT

It has been forced on the attention of the writer from time to time that there are some men, some who should be leaders, who are saying in an apologetic way that now *since we are in the war* we must see it through. One is impressed with the idea that if these persons were to express themselves fully it would run like this: "I never was in favor of this war; there would not have been any war if I had been in charge of things, but we are now in it and we cannot help ourselves; we must fight or be ignominously licked."

Such patriotism lacks the ringing note of whole-heartedness; it is apologetic and weak-kneed. A man or woman of mature judgment who cannot see that this war was for us unavoidable, is letting his emotions or his sympathies rule him instead of his reason. This nation had to go to war, if it was to preserve its self-respect among the nations; not to go to war in view of the circumstances would have caused every true American to hang his head in shame. Not only is this nation fighting to preserve its rights on the high seas, but it is also fighting—and this should never be forgotten—the battle for rights of small nations to an independent existence and far the perpetuity of free democratic institutions. We are indeed fighting for the very existence of our own country as a free and independent nation. It is a necessary, a righteous war.

Prussian militarism has gone mad, and it is now plain to every thinking man and woman, no matter what his nationality, that liberty-loving nations the world over must fight for liberty or, failing in this, autocracy will for generations to come rule the world. Let us have an end of this milk-and-water support of our government in this hour when we are put to the supreme test. We are not in this war for conquest of territoy or for any other sordid motive. We are in it for the preservation of human rights as against militarism. Those who are not for us are against us; we have no apologies to offer.

C. P. CARY.

A Phenomenon in Horticulture

We once taught Botany. May the Lord forgive us. It was in the day when Botany consisted of chasing a floral specimen through a key to find its name, and when found, or when we believed it was found, to preserve a nicely ticketed and pressed specimen suitably mounted in a neat book called a herbarium. That was a truly interesting feat. On one occasion it was dangerous. Here is the reason. Our class came across a little bush that was covered with a very pretty flower. The species being unknown to us, it was decided forthwith to make its beauty the subject of analysis and trace it through "Bergen's" key to the flowering plants. At great cost of pains we accomplished the task in the class and finally agreed that the bloom was that of Amarillidae

Americana. That sounded quite scientific and intensely botanic and it satisfied. But the next year the confounded plant bore peaches and rather impeached either Bergen himself or the users of his key, and you, Mr. Reader, probably have your own opinion as to which was to blame.

All this is simply prelude. Now comes the application.

Kaiser Bill is flaunting a little branch around that he is fondly calling an olive branch. He too may have traced it through Bergen's Key. The world is watching the bush from which it was cut. We suspicion that the Kaiser made the same mistake we made with the Amarillidae Americana. The slightest mistake will throw the observer off the track. Bill is just as liable to find the switch thrown as we. If the world watches carefully they will possible observe another horticultural phenomenon. In this case instead of peaches on Amarillidae plants it may be olives on a lemon. Nature does queer things sometimes indeed. What say you reader, will the Kaiser's olive tree produce sour lemons?—*Edgerton Eagle.*

Control of the Striped Cucumber Beetle

(Continued from page 151)

but a sufficient number should be started throughout the patch so that they will have no difficulty in finding them. If the beetles appear in excessive numbers on the trap squash vines ,they may be killed with a strong contact insecticide, such as pure kerosene. Of course the vines so sprayed will be killed.

After the beetles begin to pair it is useless to apply poison to the plants, for the beetles refuse to eat on the protected parts of the plants. Consequently, the best method of control is to keep the main vine crop covered with Bordeaux mixture (4-2-50) and plant a succession of squash seed for a trap crop upon which the beetles may feed. The Bordeaux mixture is a strong repellent and also acts as a preventive of certain diseases which are likely to occur at any time.

In small home gardens where it is not feasible to spray with Bordeaux mixture, air-slaked lime and turpentine may be dusted on the plants. One tablespoonful of turpentine added to each quart of lime will give an odor very disagreeable to the beetles. A tin can with perforated bottom distributes the lime and turpentine satisfactorily. fll

The following methods may fit the needs of special cases, or they may be used in combination with some of the above control measures.

(There is no one method which will entirely exterminate the pest; consequently it is necessary to use several remedies, and to apply them diligently at the proper times. Since the beetles have considerable power of flight, it is important that growers located within one-quarter mile of each other cooperate in their methods of control.)

If the seeds are sown thickly, enough plants may survive the attack of the beetles to insure a good stand.

Coverings of cheese cloth or wire screen will give protection to young plants, but are rather expensive for large areas. The cloth must not be so thick as to shade the plants, yet it must be woven closely enough to prevent the beetles from entering it. The covering must not be left on too long or the plants will be stunted. In the eastern states a manufactured wire covering is used very successfully.

Plants started early in a hotbed, in dirt bands, or on inverted sods, will have made a good growth before they are transferred to the field, and will therefore have a better chance against the beetles.

Dry pyrethrum, dusted over the plants while the dew is on, will kill some of the insects.

Such materials as road dust, black death, moth balls, ashes, charcoal, soot, and many other preparations are of no value except to scare the beetles away at the time of application.fll

LEST WE FORGET TO DO OUR PART

"They say, who have come back from Over There, that at night the troubled earth between the lines is carpeted with pain. They say that Death rides whistling in every wind and that the very mists are charged with awful torment. * * * *

"In this renaissance of our country's valor, we, who will edge the wedge of her assault, make calm acceptance of its hazards. For us, the steel-swept trench, the stiffening cold—weariness, hardship, worse. For you, for whom we go, you millions safe at home—what for you? * * * *

"We shall need food. We shall need care. We shall need clothes for our bodies and weapons for our hands. We shall need terribly and without failure supplies and equipment in a stream that is constant and never-ending. From you, who are our resource and reliance, who are the heart and hope of that humanity for which we smite and strive, must come these things.

(Signed)
"Citizen Soldier No. 258,
"—th District, National Draft Army."

PROTECT YOUR GARDEN

No. 7 WAR GARDEN SERIES

L. G. Gentner

If it is worth while to plant a garden, it is worth while to protect it. Insects cause heavy losses to garden crops where no effort is made to control them, while a few simple measures applied at the right time will usually entirely prevent such losses.

One of the first things to do in the spring is to get the garden and fence corners free from weeds. At all times of the season gather up and destroy all old vines, stalks and refuse as soon as the crops are harvested. Refuse and weeds furnish food for insects and shelter them for the winter if left in the garden.

Do not let insects get a start. After they once become numerous on the plants it does not take long for them to do a large amount of injury, especially on young plants. Every insect that you let live through the spring season will produce many more later.

Where insects are few in number and are easily seen, they may be controlled by hand picking and destroying. But in most cases it is much more practical to spray the plants.

Liquid sprays may be applied with a small hand sprayer which can be bought at a small cost. Dust sprays may be dusted through a cloth sack, or perforated tin can or by means of a dust gun.

Use Poisons on These

Poison sprays, poison mashes, or contact sprays may be used to eradicate certain garden pests. Here are some of the most common insects, together with the poisons to use on each of them.

Chewing Insects. Insects that eat the leaves and tender parts of the plants may be controlled by spraying plants with lead arsenate at the rate of 1 ounce (15 level teaspoons) to each gallon of water. When applied to plants with smooth foliage, such as cabbage, it is necessary to add about ½ ounce of common laundry soap to every gallon of spray to make it spread and stick better. Instead of using it as a spray, lead arsenate may be dusted on the plants early in the morning while they are still wet with dew. When used in this way it may be diluted with 3 to 5 times its weight of air-slaked lime or fine dust. Lead arsenate is preferable to Paris green because it remains on the foliage longer, is not so likely to burn the leaves, and is cheaper, especially since the war has greatly increased the price of Paris green.

Cutworms cut off young plants near the surface of the soil and eat the foliage of older plants, feeding at night and hiding in the ground during the day. A small number of plants may be protected by cutting the tops and bottoms out of tin cans and placing them over the plants, pushing them well into the soil. Keeping down weeds and thorough cultivating of the soil is also of value. Larger areas may be protected by applying poison bran mash to the soil in the late afternoon or early evening. Either broadcast the material or place in little heaps near the bases of the plants. **Care should be taken to keep poultry and livestock away from it.**

> **Be Careful of Poisons**
>
> **Lead arsenate, white arsenic, and Paris green, recommended in this circular, are deadly poisons, and care should be taken to keep them away from children and domestic animals. Bean plants should not be sprayed after the pods have formed, nor tomatoes after the fruit is nearly full grown. There is no danger of poisoning to the consumer from eating sprayed cabbage because the cabbage head grows from the inside and the outer leaves are removed before cooking. The outer leaves, however, may have enough poison on them to kill stock.**

To make up the poison bran mash mix 2 ounces of white arsenic or 4 ounces of arsenate of lead with 3 pounds of bran. Dissolve 1 ounce of salt and 2 ounces of cheap syrup or molasses in a small quantity of water. Then mix all together, adding enough water to make a crumbly mash.

Grasshoppers may be controlled by poison bran mash made up as for cutworms, except that ½ teaspoon of lemon extract or the pulp of ½ orange or lemon should be used instead of the molasses. The mash should be applied in the early morning so that it will not dry out before the insects feed on it. If the grasshoppers keep coming in from neighboring grass fields scatter the mash along the edge of the garden toward the field and renew from time to time.

Plant lice are small, soft-bodied insects which may be found massed together on the under sides of leaves and on tender shoots. They injure the plants by sucking the juices and for this reason cannot be controlled with arsenate of lead. They may be controlled by applying some contact spray, such as strong soap (preferably fish oil soap) at the rate of one-half pound to 4 gallons of water; or nicotine sulfate, 1 teaspoon to 1 gallon of water with the addition of a little soap. The spray must actually cover the insects and should be forced well into curled leaves. If all are not killed by the first application, the spray should be repeated.

Kill These Directly

Some common garden insects cannot be reached or controlled by sprays, and must be removed by gatherng the insects and destroying them, or by destroying their eggs.

Squash bugs cannot readily be controlled by means of sprays. They will collect under pieces of board or burlap and may be gathered and destroyed early in the morning. The reddish brown eggs are laid in clusters on the underside of the leaves and may be gathered and destroyed.

Repellants Keep These Out

Many insects which cannot be easily poisoned or killed directly may be kept out of the garden to a greater or less extent by the use of repellants—which keep the insects away, even though they do not kill them.

Root Maggots. The cabbage maggot may be controlled on cabbage and cauliflower plants by placing tarred felt dices about the stems of the plant at the surface of the soil, just as they are being set out. After the maggots have begun to work on the roots there is no practical remedy.

For maggots attacking onions, radish and turnips no satisfactory remedy has as yet been found. Infested plants should be pulled up and destroyed.

Tarnished plant bugs, dull grayish to brownish pests about ¼ inch long, fly readily when disturbed and cannot be controlled with sprays. They may be driven from the garden by dusting the rows with wood ashes, working from one side to the other.

Flea Beetles. These little black jumping beetles are quite often serious on potatoes, tomatoes, cabbages, beans, and similar plants. Arsenates of lead seem to have little effect on them, but they can be kept away from the plants with Bordeaux mixture. In preparing this spray slake 1 pound of lime in 5 gallons of water and dissolve 1 pound of blue vitriol in a separate 5 gallons of water. In separate solutions these materials will keep indefinitely. For application, stir both thoroughly and pour equal amounts of each into a spray can. Mix the two by stirring, and apply as well as possible to both the upper and lower leaf surfaces.

Cucumber Beetles. These yellow and black striped or spotted beetles are also not easily affected by poison, but their food plants, such as cucumbers, squash, and melons, can be made unattractive to them by dusting with a mixture of powdered lime and tobacco dust. Mix 1 pound of tobacco dust in 2 pounds of well-pulverized lime and dust the mixture onto the plants, using a gunny sack or a tin can with small holes in the bottom.

Household Insects Injurious to Fabrics

Prof. J. G. Sanders

Several insect pests injurious to various fabrics in the household and in storage, particularly to woolens, furs and feathers, are very destructive if allowed to continue their work uninterrupted by treatment. Three of these are commonly found in Wisconsin and are briefly discussed.

The "Buffalo Moth," a dark brown, bristly or hairy larva which is often found infesting carpets and rugs along the cracks and floors or near baseboards, in spite of its common name, is in no way related to the moths but is really a larval stage of a tiny, black and red checkered beetle which must not be confused with the larger spotted, beneficial "ladybird beetle." Two species are common—the true "Buffalo Carpet Beetle," and the "Black Carpet Beetle," the larva of which can be distinguished from the former by the longer brown bristles at the posterior end of the body. The destructive habits of both are similar and the control measures are identical. The presence of these pests need cause no great alarm, but constant vigilance is necessary to hold them in check.

Control: Apply a half and half mixture of kerosene and gasoline with a small spring-bottom oil-can to the cracks and crevices of the floor and around baseboards and shelving in closets. Fumigation methods discussed later are effective controls.

Clothes Moths: The two species of genuine clothes moths found in this state show preference for woolen goods, furs and feathers; and, like most other household pests, prefer to breed in dark rooms;—sunlight being obnoxious to them.

Before storing away winter woolen clothing, furs or feathers, such materials should be thoroughly brushed and hung out in the sun for three or four hours and then turned inside out and allowed to remain the rest of the day, so that all parts of the clothing will be exposed. If the clothing is freed from eggs and larvae it can then be safely wrapped in two or three thicknesses of newspaper, tied up tightly and laid away for the summer without fear of damage. Exposed woolen clothing should be frequently brushed and aired during summer months, or if kept in steam heated apartments during winter.

Moth balls, red cedar chests, etc., are worthless for controlling clothes moths in infested clothing, although they may act as a deterrent but will not drive away or kill larvae in the clothing.

Fumigation: The safest and most effective way to store fabrics is by fumigation treatment in boxes or trunks made air-tight at the bottom by pasting strips of paper over all the cracks. Place materials for storage within and evaporate an ounce of carbon bisulfide in a flat dish set in the trunk, closing the lid as tightly as possible for forty-eight hours. This treatment kills moths or other insects in all stages and no further danger need be feared.

Caution: Keep all lights from the gas of the carbon bisulfide which is a colorless, heavy, inflammable and explosive liquid. Air rooms when applying gasoline-kerosene mixtures.

Spray Irrigation

Spray irrigation, one of the most recent methods of applying water to crops to be adopted in the United States, has come into use over a wide area, especially in the Atlantic Coast States, within the past ten years, according to a recent publication of the Office of Public Roads and Rural Engineering of the U. S. Department of Agriculture, Bulletin No. 495. The bulletin discusses the conditions under which spray irrigation may be undertaken profitably, water supplies, and the various distribution systems. It includes instructions for the installation of a typical spray system, and tables from which the farmer, orchardist, or truck grower can compute sizes of pipe, capacity of pumps, and approximate costs.

Among the advantages of spray irrigation are the facts that it can be practiced satisfactorily on both light and heavy soils, and on hillsides as well as on level ground. By this system water may be applied, very lightly to delicate crops and plant seedlings, or when weather conditions require only a slight supplemental supply of moisture; and, on the other hand, it may be applied heavily during protracted dry periods.

Where economic conditions are favorable to the adoption of spray irrigation, the most important question then becomes the possibility of securing an adequate water supply. Since the system is in use chiefly in the humid or semi-humid regions, practically all installations are made by individuals and do not involve the development and transportation of distant supplies, as is common for community irrigation in the arid regions. The sources of water supply for spray

systems may be streams, springs, stored run-offs, sumps for catching drainage water, and wells. In some sections of the East, the storage of water falling on the roof of a building during the summer months is sufficient to irrigate a garden which is three times the area of the building. The reservoir in this case would need to hold about two months' rainfall, or the equivalent of six inches falling on the roof.

TYPES OF SPRAY SYSTEMS

Three types of spray irrigation construction have been adopted more or less widely for field irrigation. The hose and movable nozzle, or movable lines, fed from an underground pipe system and hydrant was one of the earliest systems to be developed and is still in rather extensive use for the irrigation of cold-frame and hot-bed crops, garden setting and seed beds, small gardens, etc. Though the first cost of such a system is lower than that of the other types, it is the least efficient, the bulletin states.

Stationary nozzles on vertical equidistant standards, varying from 4 to 6 feet for truck to a height greater than the trees in orchards, constitute a second type of spray irrigation system. The nozzles are set from 30 to 50 feet apart. The advantages of this system are rapidity of application, where this is desirable, comparative freedom from clogging, and satisfactory operation at low pressures. Disadvantages are uneven distribution of water due to uneven spread of nozzles and the overlapping of the circular sprayed areas, and lack of adaptability to more delicate crops. The cost of installation is more than that of the movable hose system and sometimes less and sometimes more than that of the stationary overhead system. The cost of operation is about the same as that of the latter.

The stationary overhead system, the third type of spray irrigation, consists of raised parallel lines of pipe in which nozzles are set every few feet. The pipe lines may be rotated so that the spray will be directed at any desired angle between the vertical and 45 degrees on either side of the line. In this way areas about 50 feet wide can be watered by each line. The pipe lines of such a system may be set on wood, metal, or concrete posts ranging in height from a few feet above ground to a height sufficient to permit the passage of horses under them. The lines also may be suspended from cables attached to poles of the size used in telephone construction. The advantages of this type of spray system are adaptability to varying needs and evenness of distribution.

COST OF SPRAY SYSTEMS

Assuming that a stationary plant for a small acreage will cost $250 an acre, the bulletin estimates that the farmer must secure, because of the system, added annual returns in excess of $51 per acre if the installation is to be a profitable enterprise. Other types of spray irrigation plants may be installed at less than $250 per acre, however, and in such cases smaller additional returns will be necessary to make the system profitable. The $51 annual cost per acre figured for the $250 an acre system includes interest, depreciation on equipment, maintenance, repairs, and cost of fuel and labor. In order that the added costs may be met adequately, good markets,

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labor and fertilizer facilities are essential, it is pointed out.

How to Cut Roses

There is a right and a wrong way to cut roses. The choice of the latter may seriously injure the blossom-producing properties of the plants, it is pointed out by specialists of the U. S. Department of Agriculture. This applies particularly, of course, to rose plants chosen and grown especially for cut-flower production. Such roses will be largely of the perpetual blooming sort.

When a rose is cut from such plants—tea roses or other perpetual bloomers—only two or three eyes of the current season's growth of that branch should be left on the plant. This should give the roses very long stems. Succeeding blossoms should be cut close to the ground. It will seem like destroying the bush to take so much off it, but if the object is the production of roses, the cutting away of the surplus wood will attain the desired end.

If the spring pruning has not

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Our Specialty: Planting and Developing orchards for non-residents. A few choice tracts for sale. If interested, write us.

KICKAPOO DEVELOPMENT COMPANY

GAYS MILLS, WISCONSIN

been sufficiently severe the plant is likely to have long, naked stalks and short stems to the flowers. With this character of growth only one or two strong leaf buds should be left on the branch when the flower is cut, so as to stimulate as much growth as possible from the base of the plant.

The greatest temptation to leave wood is where there are two or more buds on one branch, some being small when the terminal one is open. This temptation to follow a bad practice can be avoided by pinching off all side shoots after a bud has formed on the end of a branch. This prevents the formation of two or more buds on one stalk. This summer pruning will encourage additional blooms on varieties which bloom more than once a year.

Loyalty.

The food situation is today tragically serious and hunger may imperil a conclusive victory for the Allied armies if the people of America do not exert their utmost effort. Persistent and methodical propaganda has been used against the work of the U. S. Food Administration and other undertakings to increase the country's effectiveness. Untruths have been fostered which have done more harm than battalions of German soldiers, because they have prevented this country bringing all its resources to bear against the enemy.

Loyal citizens have served the purpose of this insidious German Menace by repeating silly stories and grossly untrue rumors and by belittling the Food-Pledge. Any attempt to burlesque the "eat less" of the foods urgently needed for shipment overseas to the soldiers, and "eat more" of foods not so suitable for export assists the enemy and discredits what is being done in the interests of our men in khaki and the women and children of the allied nations.

The American whose heart is with the flag will back the efforts of the Government not only by deeds but by every word he utters. There is abundant reason to warn the people of this country against propaganda that lends assistance to the enemy and retards the organization and unification of the people.

This little "story" sent to editors of farm journals by the U. S.

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Arsenate of Lead
Paste or Powder
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GET MY 1918 SEED CATALOGUE, IT IS FREE
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JOHN K. RUGOWSKI
Pride of Wisconsin Seed Man
MANITOWOC, WIS.

Food Administration is worthy of serious attention by every reader of this paper. The food situation, especially since the defection of Russia *is* tragically serious. Loyal citizens, people who are either thoughtless or ignorant or both *do* repeat "silly stories and grossly untrue rumors." Be careful what you say! Your loyalty may be unquestionable, you may be at heart a true American but if you repeat these mysterious rumors or permit them to go unquestioned you are playing into the hands of our enemies which means that you are helping to kill our soldier boys. Do you want to do that?—Editor.

On Keeping Bordeaux Mixture

"Bordeaux mixture may be kept indefinitely, physically and chemically as when first made, by the addition either of a little cane sugar or glucose."

So says Prof. B. F. Lutman of the Vermont Agricultural Experiment Station in Bulletin 196.

The Cabbage Worm

Particular attention is invited to the article in this number on the use of poison to combat the cabbage worm.

Institute speakers on horticulture always go prepared to answer this question, "What can we do to kill cabbage worms.". Sometimes at institutes they make a little bet on the side that that will be the first question asked. No other worm seems to be as popular as the cabbage worm and none causes more damage in the home garden.

This is because most people are afraid to use poison on cabbage. Prof. Wilson tells us that there is no danger in using arsenate of lead or Paris green on cabbage plants and every market gardener in the state will endorse the statement. Use a heaping teaspoonful of dry arsenate of lead to 2½ or 3 gallons of water or 1½ times this quantity of paste arsenate. Paris green is quite as effective and at the present writing is not more expensive than arsenate of lead, at least when bought in small quantities.

A heaping teaspoonful of Paris green or powdered arsenate of lead to one quart of flour or air-slaked lime, sprinkled on cabbage when it is moist, will get the cabbage worm.

Cucumbers require warm, rich soil and plenty of moisture. Keep them growing rapidly from seed to harvest.

Thorough cultivation in the garden is of much greater value than artificial watering.

It is not too early to think about exhibiting fruits, vegetables or flowers at the state and county fairs this fall. Grow something well and show it.

If you believe in peace you will fight to get it.

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Strawberries
Native Plum Small Fruits
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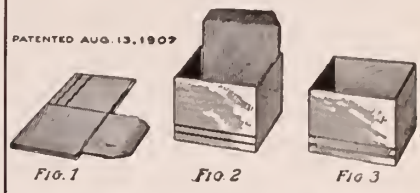

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

Planting Lawn and Border Roses

The chief consideration in the planting plan for roses for landscape effects is that the plants should be so spaced that when they reach maturity they will come together without overcrowding. The habits of growth of the particular varieties chosen will be the determining factor. The spacing should in general range from 2 to 6 feet. Early spring planting is best in the extreme northern part of the United States and on the western plains where there are strong drying winds in the winter. In other regions fall planting is advantageous but not sufficiently so to warrant postponing planting from spring until autumn. When possible, however, it is well enough to push planting in the fall rather than to wait until spring. Spring planting should be done as soon as the ground is dry enough to work or when it springs apart after being squeezed in the hand. Fall planting is best done as soon as the leaves have fallen from the trees and bushes.

Keep the aphids or plant lice off the flowers and garden crops by frequent spraying with some tobacco preparation.

All roads of "service" lead to France.

Stand behind the boys at the front—but not too far behind.

Do not let the vegetables remain too thick in the row. Too many beets to the foot in the row is just as bad as weeds. Get the maximum results from your ground by thinning and good care.

Head lettuce requires cool, moist conditions for growth. Consequently it can be grown best in early summer and late fall.

Late celery should be transplanted from seed box to cold frame. Two or three transplantings before the plants go into the field make stockier and better rooted plants.

Order Your Spray Materials now.

Cream City Arsenate of Lead has a maximum killing power, sticks longer, no lumps, or sediment; therefore gives the highest efficiency and greatest economy.

Cream City Lime Sulphur
33° Beaume.

Cream City Sodium Nitrate
used for fertilizer.

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WRITE FOR INFORMATION AND CIRCULARS

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONS IN STATE HORTICULTURAL SOCIETY

Volume VIII Madison, Wisconsin, July, 1918 Number 1

Sweet William: One of the oldest garden flowers and formerly found only in old fashioned gardens. The newer types have larger flowers and more brilliant coloring than the old fashioned kinds. A biennial easily grown from seed.

Practical Hints for the Amateur Gardener

July is a critical month in amateur gardening. In normal seasons we can count on a dry spell and if long continued, two weeks or more, it may spell disaster and possible failure of many crops, *unless*,—the garden was properly tilled in June. The wise gardener took heed in May and June and never permitted any weeds to grow in his garden. He killed all of them on sight, or sooner, by frequent hoeing. Frequent hoeing and raking also conserved the water supply in the soil so that his plants can stand a week or two without rain. How did hoeing hold the water in the soil? Simply by keeping a layer (blanket) of loose soil on the surface preventing the escape of the soil water.

By the middle of July the garden will be pretty well "made" but it must not be wholly neglected. Frequent shallow cultivation is important even in dry weather. Much walking between rows packs the soil and destroys the blanket mulch.

Cultivation in the home garden should always be shallow, not to exceed two inches. Deeper hoeing will sever roots that the plant needs.

Hilling or drawing earth toward the plants seems to be the favorite pastime of many gardeners. Some gardeners "hill" or mound most everything, drawing the earth up to the roots of the plants leaving a deep furrow between the rows. Nobody seems to know *why*. There is no "why." Potatoes, if planted shallow, may need a little hilling, just enough to cover any tubers that may push out of the ground and thus become sunburned but to do more than this is a useless expenditure of labor. Hilling such vegetables as beets, carrots, cabbage, etc., is even worse, its a positive detriment to the crops. Level, shallow cultivation is best.

Two insect pests make life a burden for the amateur gardener in July, the potato beetle and the cabbage worm. Both are so easily controlled that the "ol' timer" is never worried for a minute about them. Just simply poison them and quit worrying. Anyone who aspires to be a real gardener should be ashamed to be found collecting potato beetles by the old-time method of batting them into a pan. That's old stuff, entirely out of date, not good form in gardening circles. It simply isn't done. Anyway it's an expensive and inefficient plan of disposing of potato bugs and there is a better plan.

Firstly don't worry about the mature beetles, the egg layers. They eat but little of the potato vines but keep busy laying eggs on the under side of the leaves. Let them keep on if it's any satisfaction to them, but lay in a supply of arsenate of lead and attend to any other business you may have *until these eggs begin to hatch*.

As soon as the first dirty red larvae appear, and not two minutes later, spray the vines with an arsenate of lead solution, about two heaping tablespoonfuls of the dry arsenate to 2½ to 3 gallons of water. If you have no spray pump use a sprinkling can; if no can don't buy one, borrow one or use a whisk broom. To make the dope stick add a little soap, a piece as big as my thumb, dissolved in hot water and added to the poison mixture. This dose should not need to be repeated as new leaves form as not all the eggs are laid at one time. Paris green may be used in place of arsenate of lead if preferred.

Use arsenate of lead or Paris green for the cabbage worm. "Oh, very well, you don't need to do it if you don't want to!" "They are your worms not mine and I wish you much joy with them. Pick them off with your fingers if you want to. I should worry."

That's what the experienced gardener feels like saying when his neighbor asks him how to kill cabbage worms and friend neighbor comes back, "use POISON on cabbage, why we *eat* the cabbage."

Surely we eat cabbage, but not the part that is poisoned. The cabbage grows from *inside* and the newly formed leaves are always in the very heart of the plant.

Prof. Wilson's experiments prove conclusively that there is no danger whatever in using cabbage sprayed with poison even one week before maturity. Don't pick cabbage worms, poison them.

While the striped cucumber beetle usually disappears with the end of June the squash bug, a much larger beetle and equally dangerous, may happen along in July. This pest simply cannot be poisoned as it feeds by sucking the sap of the plant. About the only defense is to protect the plants with screen, if practical, or, trapping by laying boards or stones around the plants which furnish a shelter attractive to the bugs.

Arsenate of lead is mentioned in Wisconsin Horticulture oftener than Paris green because it is a

more satisfactory poison and safer to use. Unless lime is added to Paris green solution burning of the foliage is apt to result. With arsenate there is no danger. The arsenate does not settle as quickly as Paris green and sticks better to the foliage. Arsenate of lead may be had at any drug store.

The Wisconsin Apple Grading Law.

By Dr. E. D. Ball.

Let us start out with the statement that the apple grading law was made by and designed for the producer. The enforcement of the law has been put into the hands of the Department of Agriculture. Its work has been and is going to be in the interests of the grower, and if we do not enforce this law to your satisfaction, it is going to be your fault, because we expect to be your agents in the carrying out of its provisions.

The enforcement of the apple grading law is with the idea of developing more orchards and better orchards, and of producing a standard to which each man can work. I am going to ask this society to appoint a committee to fix the standard, and if with your assistance, we can produce a certain standard product for the state of Wisconsin, every single man in the state that produces that standard will be able to get more money for it than you are getting for those same apples not standardized.

In travelling around in the state I find one man packing No. 1 and 2, another packing A. and B. and a third packing X and XX, and all kinds and variations of these labels, but they mean absolutely nothing to anybody except to the man that packs, because there is no standard. One man may be packing an entirely different thing for No. 1 from the man right across the street. So the law as I understand it is designed to provide a definite, written and published standard, and then provide an inspector to see that the classed package is designated with the proper standard and the name of the man that packed it.

To illustrate the working out of the law let us divide all apples into two classes on quality. Apples that are really fit for human food and have keeping quality; such apples do not have worm holes, they do not have bad scab blotches, they are not deformed by scab or curculio or by puncture of any insect. Those are the essentials of quality, it does not make any difference how much color they have nor how much size they have. A ripe apple regardless of its size is a food product. In fact, a medium small apple if often times a better food product than an over grown big one.

In apple grading we must learn three grades: Wisconsin standard fancy apples, Wisconsin standard A, Wisconsin standard B. All those three grades presuppose quality, practically the same quality as far as food value is concerned. Eliminated from them are wormy apples, badly scabbed apples, deformed apples, bruised apples, apples that are not fit for food. In these grades we only put apples that are good for human food and have power enough to keep, so that they will be fit for food when they reach the consumer.

We devide these apples of quality into fancy, if they have high color, standard A if they have one-half that much color and standard B if they have less than half color. The division is not on quality but on attractiveness. The extra fancy apple with the high color must not have anything that detracts from its attractiveness. It must not even have a worm sting that has been healed over and that has practically nothing to do with the keeping quality or food value of the apple, but it does detract from its showiness. Standard A is an apple that does not have quite that extraordinary excellence of finish, it may not have as high a color, it may have a little bit of a mark in the way of scab, it may have a little mar in the way of a sting, if that sting does not interfere with its quality. Standard B may have a little larger defect, not enough to interfere with the quality materially, but just a little with the appearance. This grading differs from the former in taking what you have put into two grades under the old grading system and made three grades of it.

Size makes little difference in the value of an apple. That has been recognized in the western box apples, but it is equally well recognized that uniformity of size is of great value. If you take a large apple and a small apple and put them in the same package, they will sell on the size of the small apple and in comparison they will look inferior and you will get a small price. If you separate them out and put them into separate packages of uniform size, it increases their attractiveness and sale price immediately.

Grading for color must be done by hand. The law provides that in fancy grades you must sort for color. A fancy grade must be sized so that there will be no more

(*Continued on page* 165)

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—Pershing.

"America is God's last chance to save the world."
—Emerson.

"Extravagance costs blood, the blood of heroes."—Lloyd George.

Hit hard and quickly for all we have and are and hope to be!

The Summer Meeting.

The Summer meeting of the State Horticultural Society will be held in Baraboo Wednesday and Thursday, August 21st and 22nd.

One day, the first, will be devoted to papers and talks on subjects of present day interest and one to visiting gardens and orchards in the vicinity, including the Toole pansy farm and our trial orchard on the Ski-Hi fruit farm.

The summer meeting is well worth while. Our sessions in years past were not all that could be desired either from point of attendance or interest but that sort of thing has passed. The summer meetings of late years have been very profitable and interesting and the attendance excellent.

It will be so this year or even better for the horticulturists realize their responsibilities in the war and want to face them.

Baraboo is called the Gem City and is well named.

Baraboo people make no claim that their city is a metropolis, nor desire that it should be such. It is truly a little gem, set among the hills with wide, shady streets, a clean and comfortable looking city.

The people of Baraboo are not boastful nor filled with false pride but there is always a warm welcome to strangers.

There is a calm dignity about Baraboo that attracts. The program will follow closely the lines of that of last year as it is fitting it should. It will be a war program with emphasis on conservation of fruit and vegetables.

The following topics will be discussed:

Harvesting and Storing Vegetables, Storing Apples, Cider Making, Drying and Canning Apples; Homemade Syrups and other topics pertaining to the saving the fruit crop. The beauty of our home surroundings will not be overlooked nor forgotten. The raising of flowers is now more important than ever and we will talk about that, too.

The evening session will be announced later.

The complete program will appear in the August number but do not wait for that. Decide now to attend.

State Protects War Gardens.

The supreme judicial court of Massachusetts held, in the case of Commonwealth vs. Gallata, that where a landlord terminated a tenancy at will of city lots, the tenant was entitled to growing crops as against the landlord and a subsequent lessee with knowledge of the first tenancy.

The court said: "The general principle is that where a person is in possession of land under a title that may be determined by an uncertain event not within his control, it is essential to the interest of agriculture that such a termination of his lease shall not prevent him reaping what he has sown and we see no reason why a tenant should be denied the right to emblements by the act of the landlord where the crop is raised on a city lot rather than on a farm." *Emblements:* The growing crop or vegetable growth, or profits of a crop, which has been sown or planted. (Definition.)

Prune spiraea bushes as soon as they are through flowering. Remove all old wood and thin the new growth Spade around the plants and fertilize them well. Better flowers will result next year.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Blight Problems

In sending out inquiries as to causes, prevention, and treatment of blight and false blossoms, President Searls says, "we have asked a mighty hard pair of questions."

We know this is true. It is because there is a general lack of, and need of knowledge that we sought information. Whether from indifference, or inability, the responses have failed to appear except from Mr. Searls who sends us the following:

"I have looked upon the question of cranberry blight in a little different way from what the growers usually term blight. I look upon this troble as rather a manifestation of weakness, or of injury, which may have been received a long time before the bloom has taken place. The vine may have been weakened by overflooding, which may be done by being put under water too early in the fall—or continued too late in the spring, or the bloom on very young berries injured by cold nights. Blight may be caused by snow storms at a critical season in the bloom, also, blight may be caused by drying winds where the root system is not well protected.

I believe we should not expect every blossom to mature fruit. Most plants produce a greater amount of bloom than they can possibly carry to maturity. I believe the wise grower will look well to provide the best possible conditions for his plants, that they may be strong, healthy, and well fed. In order to do this, we plant on well sanded ground. Where this has not been done at the time of planting, we give the plants several applications of sand, of say, ½-inch at a time, until we have a bed on which any cranberry plants can be assured congenial living quarters. The sand will greatly help in maintaining a proper temperature on cool nights, it also protects the root system from the drying winds, and greatly aiding in keeping a proper amount of moisture for the plants.

H. J. Gebhardt, of Black River Falls, reports some spring killing, caused, he thinks, by pruning and other work among the vines during the month of April. Twenty to twenty-five per cent, he thinks, would be a fair estimate of damage done, but is pleased to add that prospects are for a fair crop with yield about same as last year. His first blossom appeared June 11th, which was ten days earlier than last year and six days earlier than the previous year.

Mr. Gebhardt planted a two-acre piece this spring and considers growing conditions have been very good.

Edward Hableman, of Beacon, is meeting with good success in the use of fertilizers. Tankage has been used for four years and some of the pieces have given a yield of three bushels to the square rod. Injury was done some pieces by over sanding two years ago. The prospect this year is best he has ever seen. The fertilizer is applied in the spring about 500 pounds to the acre. Vines also show up well where hardwood ashes was used at the rate of four barrels to the acre. The yield has doubled where these were used.

The Apple Grading Law.

(*Continued from page* 163)

variation in packing than a half inch in diameter, so if you are intending next year to label an apple fancy, you must grade it to size as well as color. There is no size requirement in standard A and standard B, except that you must label on the package the smallest size in the package. It will pay you to sort sizes and label different sizes, but do not sell small sizes for much less than you do the big ones. That is what you are doing under your old grading system.

Under the grading law you are going to handle apples more carefully, sort them on cloth tables padded so that they will not bruise. You are going to do more spraying and more thinning. You are going to do more pruning, because pruning and thinning will raise the size of your apple and you will not have so many small ones. I believe the result of our grading law will be to increase the production of standard apples in the state of Wisconsin materially. I believe it will result in increasing the price that Wisconsin apples will bring. I believe it will result in taking off the stigma, "Oh, those are Wisconsin apples," and changing it to an exclamation "Oh, those Wisconsin apples!"

They Need No Amusement.

Every evening, in a million American homes, a well-fed, amiable family group rises from cheerful dinner tables to vote on the questions, "Where shall we spend the evening? What shall we do for amusement?" The day's work is done and we need relaxation. So many things beckon—movies, theater, a war-lecture, a motor-ride, cards, dancing, or a peaceful loaf with papers and pipe and knitting. Which shall we choose? Life for us is so rich with interest, so full of comfort and beauty that daily we make many choices between pleasures, between one comfort and another.

An American Y. M. C. A. secretary is back from France bringing a different picture. In a forest just back of Verdun is a French camp of 30,000 soldiers. They have been there three years, under constant fire, living interminable days in cold rain and in mud that sucks and clings and filthies them over like some vile beast that cannot be thrown off.

In recent months, the French Red Cross has built a crude hut in the camp and the American Y. M. C. A. has loaned two secretaries for work there. The hut is rather bare of furniture. There are lights and a stove, chairs, tables and writing materials, and that is about all, no graphaphones, no piano, no books. A visitor inquired pityingly, "But what do you do to keep these men entertained?"

Silence a minute and then the reply ringing across the world to us by our fires and at the movies, and the restaurant tables:

"The French soldier this fourth winter of war does not need entertainment. All he wants is a place a little dry, a place a little warm, a place with a little light so he can just rest, rest, rest."

What shall we do for amusement this evening? Well, for one thing let's write a check for the Red Cross, and another for the Y. M. C. A.—and gather up some of our books and write some letters to soldiers. And then let us go on our knees to ask forgiveness if we forget in our amusements those who give their souls and bodies for us, asking—no, not even asking in return an hour a day in "a place a little warm, and dry, and bright."

Editorial Wisconsin State Journal.

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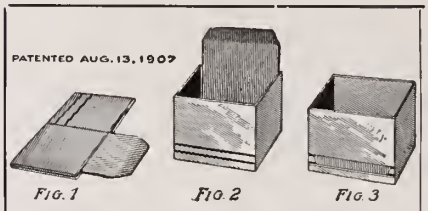

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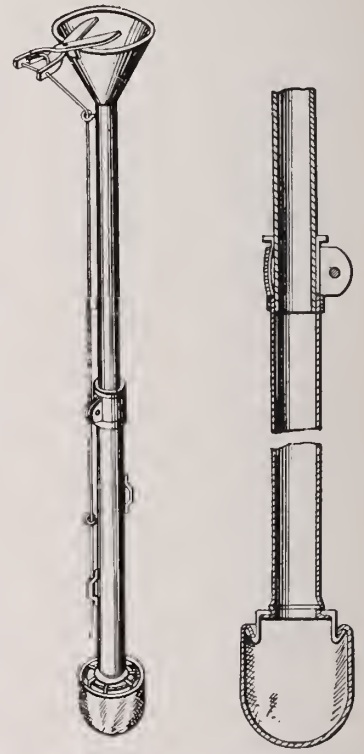

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No Sack like it yet it embraces all the best features of commercial Sacks.
Fits high and therefore furnishes free use of the body.
Only Sack made with the proper balance — used now by the largest commercial orchards in the United States and Canada.

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The Kingston Orchard
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Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

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Write for catalog and prices Baraboo, Wis.

Silver or White Birch Berry Boxes

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Write for circular and price list.

SHEBOYGAN FRUIT BOX CO.
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Order Your Spray Materials now.

Cream City Arsenate of Lead has a maximum killing power, sticks longer, no lumps, or sediment; therefore gives the highest efficiency and greatest economy.

Cream City Lime Sulphur
33° Beaume.
Cream City Sodium Nitrate
used for fertilizer.
Gives plant an early start and supplies necessary nitrogen.

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WRITE FOR INFORMATION AND CIRCULARS

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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The Jewell Nursery Company
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McKAY NURSERY COMPANY

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VIII | Madison, Wisconsin, August, 1918 | Number 12

"The past and the present are in deadly grapple and the peoples of the world are being done to death between them."

"There can be but one issue. The settlement must be final. There can be no compromise. No half-way decision would be tolerable. No half-way decision is conceivable."

"What we seek is the reign of law, based upon the consent of the governed and sustained by the organized opinion of mankind."

"The blinded rulers of Prussia have roused forces they knew little of—forces which, once roused, can never be crushed to earth again, for they have at their heart an inspiration and a purpose which are deathless and of the very stuff of triumph."

—From President Wilson's Address, Mount Vernon, July 4th, 1918.

Farm and Home Drying of Fruits and Vegetables

POSSIBILITIES AND LIMITATIONS OF DRYING

For preserving perishable foodstuffs, one of two general methods may be pursued. One of these consists of heating to destroy decay-producing organisms, and sealing. This is what we do in canning. The other removes so much moisture from the material that organisms are not able to grow and multiply in it. This is evaporation or dehydration. In the case of any particular material, judgment must be exercised in determining whether it shall be dried or canned.

Drying has the very great advantages that the product has a weight only one-fourth to one-ninth that of the fresh material; that there is a very considerable reduction in bulk, due both to actual shrinkage and to the fact that all portions not actually fit for food are removed; and that the dry material may be stored almost indefinitely without danger of deterioration and without the use of expensive special containers. At the same time it must be understood that evaporation has very definite limitations and that it is not applicable by any means to all fruits and vegetables. There are a considerable number of fruits and vegetables which it is not advisable to attempt to dry, either because they undergo changes in drying which render them unpalatable or because they deteriorate rapidly after drying; also there are a considable number of vegetables which are so readily kept for long periods in storage, either in out-of-door storage pits or in an ordinary cellar, that any labor expended in drying them under any ordinary conditions would be wasted.

FUNDAMENTAL PRINCIPLES OF DRYING

Most failures in drying are due not so much to imperfections in the equipment used as to the failure of the operator to understand a few fundamental principles which must be kept clearly in mind if the work is to be successful. The purpose in view in drying any food material is not merely the removal of sufficient water to insure good keeping; it is equally important to preserve all the food value of the product with as much as possible of the natural flavor and cooking quality characteristic of the raw material. This double purpose cannot be successfully accomplished unless certain guiding principles are kept in mind.

The air at the earth's surface is capable of taking up and holding as water vapor considerably larger quantities of moisture than are ever present in it; that is to say, the free atmospheric air never becomes completely saturated. Consequently, any wet material exposed freely to the air will ultimately become dry, since the liquid water covering its surface will be converted into water vapor and taken up by the air. The rate at which this will occur will depend upon the temperature of the air and upon the percentage of moisture already present in it when brought into contact with the material. If the air remains at constant temperature and is undisturbed by currents, the loss of water from the material will go on very slowly, as the air nearest the wet surface will soon become almost saturated and can take up more water vapor only as that which it already holds is lost by diffusion outward and upward into layers of drier air. If the air be kept constantly in motion, however, the drying will be greatly hastened, as the moving air current will displace the blanket of moist air surrounding the material as rapidly as it is formed and bring in drier air to replace it. If the temperature and moisture content of the air used are both constant, the rate of drying will increase proportionally as the rate of movement of the air is increased, until a point is reached at which water can not pass from the interior to the surface of the material as rapidly as the air is able to take it up, when the surface will become dry even though the interior is still nearly saturated. The effect of a brisk breeze in hastening the drying of the surfaces of muddy fields after a rain is a familiar illustration of this principle.

Drying is also hastened by raising the temperature of the air. The amount of water vapor which a given volume of air can absorb before reaching saturation depends upon the temperature and is practically doubled by every increase of 27 degrees in temperature. In other words, if a quantity of air be warmed from 60° to 87° F., its moisture-carrying capacity is doubled; if the heating be continued until a temperature of 114° is reached the moisture-carrying capacity is again doubled, becoming four times what it was at 60° F. Further heating produces further increases in the same proportion, until a point is again reached at which water is vaporized at the surface more rapidly than it is replaced by movement outward from

the interior of the material, when the process will, of course, be slowed and stopped by the drying out of an outside layer, which will then retard the escape of moisture from the tissues beneath it.

There are therefore two ways in which the rate of drying can be increased; namely, by increasing the temperature of the air or by quickening its rate of movement over the material to be dried. Economical drying is secured by combining the two and forcing currents of heated air over the material at such temperature and rate of movement as will remove moisture from the surface as rapidly as it can move outward from the interior of the fruit or vegetable being dried. When this point has been reached, any expenditure of heat in further warming the air or of force in driving it is, of course, wasted.

Generally speaking, flavor and cooking quality are best preserved by rapid drying. Fruits and vegetables are living things; when their flesh is opened up to the air, as occurs in peeling and slicing, a number of chemical changes in the tissues immediately begin. If the material is to retain its natural appearance, color, and flavor, these must be checked. Some of these changes produce darkening and discoloration of the tissues; others break down the pigments present, causing the fading of the characteristic colors of the material; and still others affect the flavoring substances present, producing decrease or loss of the constituents which give the fruit or vegetable its characteristic flavor. Other accompanying but slower changes result in the partial destruction of the sugars and proteins of the material, sometimes accompanied by the production of new and undesirable flavors and odors. While these changes are in parts spontaneous, many lower organisms, universally present in the air and upon foodstuffs—bacteria, yeasts, and molds—which produce similar but much more rapid decomposition, are certain to begin growth in the material as soon as the removal of the protecting peel gives them access to its interior. Consequently, processes of decomposition begin as soon as the fruit or vegetable is opened to the air and will continue until the greater part of the moisture present is removed unless special means are employed to arrest them. This decomposition would be immediately stopped by raising the temperature of the material to 175° or 185° F., but it is not possible to do this without causing injury. The rapid heating to this temperature in dry air of freshly cut slices of a succulent fruit or vegetable causes bursting of the cell membranes by expansion of their contents and permits the escape of water which carries with it dissolved sugars, salts, and flavoring substances, thus reducing both the palatability and the food value of the product. Consequently, only moderate temperatures can be employed, and unfortunately all, or practically all, the changes under discussion are not only allowed to continue but are actually hastened when the temperature of the fresh water-filled material is raised to the limit beyond which bursting and dripping will occur. To arrest these changes and to preserve the natural colors and flavors of the material it is necessary to resort either to blanching or sulphuring, both of which are discussed elsewhere.

It follows from the foregoing statement that rapid drying can not be secured by the employment of high temperatures with fresh water-filled material. Nor can material already partially dry be subjected to high temperatures, as scorching and charring will then occur. The best temperature for drying is therefore the highest which can be employed without danger of injury in either of these ways, since the drying will thus be made most rapid. What this highest possible temperature may be is determined in the case of any particular fruit or vegetable by its physical structure, chemical composition, and water content. As the different fruits and vegetables show very wide variations in these respects, there is no single best temperature for general use with the various products; heat treatment which would be perfectly safe with potatoes or carrots would be utterly ruinous if applied to such fruits as raspberries and peaches. For this reason it has been necessary to determine experimentally for each of the different materials the range of temperatures which may be employed without injury. These are given on subsequent pages. The operator of a drier should be provided with a dependable, accurate thermometer which should be placed in the drier and kept under frequent observations, as any attempt to trust to inexperienced judgment as to temperatures in the drier is likely to result in damage to the material.

In drying any food material it is absolutely indispensable that provision be made for the prompt

Continued on page 176

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SUMMER MEETING

A discussion of the program

The meeting at Baraboo ought to be a success. It will be a success. The program as you read it on this page is rather a cold looking affair, so we will discuss it a moment. The big idea is to learn how to care for the second and third grade apples, the apples that sometimes rot on the ground in farmers' orchards because they are not quite good enough for barreling, and for other reasons. Nothing should go to waste this year, not even scabby apples.

PROGRAM
SUMMER MEETING

State Horticultural Society

Al. Ringling Theater, Baraboo, August 21st and 22nd, 1918

Warren Hotel—Headquarters for Officers

Wednesday 9:30 A. M.

You are Welcome .....The Mayor of Baraboo
How to Can Apples, Tomatoes and Corn, Mabel J. McBain, Supervisor Domestic Science, Houston, Texas.
Drying Fruits and Vegetables, Mr. J. H. Prost, International Harvester Co., Dept. of Agriculture.
How to Make Apple Butter ..... C. R. Tuttle

Wednesday 2:00 P. M.

Cider Making ..... C. R. Tuttle
Madison Gardens ..... D. H. Ried
Milwaukee Gardens and Gardeners ..... Joseph Barr
(Representatives from other cities expected)
Why has the Growing of Raspberries Declined in Wisconsin?
Answers by:
..... D. E. Bingham, Grower
.....M. S. Kellogg, Nurseryman
Winter Storage of Fruits and Vegetables.....General Discussion
An Insect ..... Dr. S. B. Fracker
Other Bugs ..... Prof. R. E. Vaughn

Unfinished Business

Wednesday 8:00 P. M.

A Patriotic Meeting at the Ringling Theater, preceded by a musical program. Arrangements are now under way for a speaker of prominence but until written acceptance has been received the editor can "name no names."

War conditions seriously affect the making of a program such as this. Prof. J. G. Moore, who expected to attend, is in service at a reserve officers' training camp until September. Members of the Home Economic department have been called for war work and so on down the line. As it looks at this writing an entirely new list of names may appear on the program August 21st, but the *subjects* will be left and competent persons to lead in the discussion of them.

Thursday

The program for Thursday is in the hands of the local committee and will be announced on Wednesday, Aug. 21st. From scraps of information picked up by the secretary it appears that Thursday's program will be as profitable and entertaining as any we have had in former years.

PREMIUM LIST

The following premiums are offered for exhibits of flowers and vegetables, at the Summer Meeting, Baraboo, August 21 and 22.

Class I

	1st prize	2d	3d
10 vases of Asters, 1 doz. each	$3.00	$2.00	$1.00
5 vases of Asters, 1 doz. each	2.00	1.00	.50
Vase Asters, one color. 1 doz.	1.00	.50	.25
Display Dahlias, not less than 5 varieties	5.00	3.00	2.00
Display Pansies	3.00	2.00	1.00
Display Perennial Phlox, not less than 5 varieties	3.00	2.00	1.00
Display of Gladioli, not less than 25 blooms	3.00	2.00	1.00
Display of Annual Garden Flowers	5.00	3.00	2.00
Display Herbacouns perennials correctly named	5.00	3.00	2.00
For best specimen Fuchsia, Rex Begonia, Begonia of any other variety, Sword Fern, Asparagus Sprengerii, for each	2.00	1.00	.50
Best collection native flowers in arrangement and variety; varieties to be shown separately, each with card attached giving both common and botanical names	5.00	3.00	2.00

Class II

Snap Beans, 1 lb.	2.00	1.00	.50
Lima Beans, 1 lb.	2.00	1.00	.50
Cranberry Beans	2.00	1.00	.50
Two Heads Cabbage	2.00	1.00	.50
6 Onions	2.00	1.00	.50
Six Ears Sweet Corn	2.00	1.00	.50
Three Cucumbers	2.00	1.00	.50
Three Muskmelons	2.00	1.00	.50
Six Tomatoes	2.00	1.00	.50
Six Beets	2.00	1.00	.50
Six Carrots	2.00	1.00	.50
Two Egg Plant	2.00	1.00	.50

Class III

For War Gardeners

For Boys and Girls Under Sixteen

Best display vegetables grown by boy or girl under 16, in home or school garden. Twenty dollars divided pro rata.

Best display vegetables from "home" garden by person over 16. Twenty dollars divided pro rata.

Exhibitors in Class III may also show in Class II.

Sweet corn and tomatoes are about the only perishable vegetables remaining after August 21st and the surplus must be saved.

Therefore: experts will tell us how to can and dry these for winter use.

Mr. Tuttle who has been very successful in making and selling apple butter and cider will tell how to do it.

Cellar storage of vegetables is also of great importance. No one in particular has been chosen for this topic but the presiding officer will squeeze out every bit of information to be had. Its the little hints that count here. Everybody who has had success or met with failures must speak up in meeting.

War Gardens in Madison and in Milwaukee will be discussed by Mr. Reid and Mr. Barr. This will merely open the subject, giving everybody an opportunity to talk. This is to be a survey of the year's work and a look ahead for next year.

Never were raspberries so scarce in Wisconsin as this year. Many fields have been plowed out and others to follow. What is the reason? Berries both black and red are selling today, July 20th, at 44 cents a quart retail. Surely that's a good price. What's the reason for the shortage. Shall we plant more berries next year? These and other questions will be answered by Mr. Bingham and Mr. Kellogg, at least to their own satisfaction. If others do not agree with them, there will be chance for a good discussion. Perhaps we will learn something.

From a casual, hasty reading of the program it might be inferred that Dr. Fracker is referred to as an "insect." Such is not the case. Dr. Fracker who is assistant State Entomologist, knows about an insect and will tell us. The same with Prof. Vaughn; "bugs" is a term common among scientists to indicate disease organisms. We need these men. They can tell us in plain manner the things we ought to know.

It is a good plan to leave a place open on the program for Unfinished Business. We have it. What will YOU have to offer?

After we have finished the unfinished business, the Women's Auxiliary will meet to complete the organization begun at the annual convention. The men are expected to go about their business, if they have any.

Try saving seed of some of the vegetables and flowers in the garden this year. Seed may be harder to get next year than this.

America's glorious privilege is to feed the world while it fights its way to freedom.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

It is considered something of a feat to be a successful grower of cranberries. Man's wisdom, strength, and unerring judgment are usually thought necessary. We have a few rare instances, however, where woman has proven her ability to conduct this enterprise and are submitting this month an article by one of them—Miss Lydia M. Huyck—a Chicago lady who some years ago assumed the responsible position of manager of the Lewis Cranberry Company's marsh at Minong, Wis., and whose skillful efforts are producing fine results.

Value of Sanding

I have been trying for some time to write about methods and costs of sanding. The more I think about it the more useless my information seems to the others needs unless all of the conditions equal ours. Sanding and re-sanding are most essential to proper cranberry culture. It builds and strengthens the foundation for good healthy growth. In many instances it is a most effective weapon against weeds. The wonderful advantage is evidenced on the bog at Cranwood.

We have sanded in the winter with sleds and teams, we have sanded in the spring with wheel barrows, both methods met the needs at the time. We sanded in the winter where the hauls were long and the ice was necessary for teams. This spring we sanded a few bogs which were close to the sand pits and wheel barrows could be run out on planks. All sand must be put on from shovels and scattered well.

Labor conditions here as well as with all of us are such as would hardly warrant a proper cost basis. Whatever the cost the benefit proves the desirability. We did considerable weeding while we were sanding this spring.

The positive thing I can say is to *sand* and *re-sand*. If the hauls are long do it in the winter when sleds can be used, but under any conditions scatter the sand well and do not put on too much.

The sanding is done to help the new growth and it must not be buried; it must be given an opportunity for a good foundation.

Lydia M. Huyck.

Bees and Cranberries

In a 1918 issue of Green's American Fruit Grower in Gleanings in Bee Culture, conducted by E. R. Root, we find the following, and wonder if any of our Wisconsin growers have had any experience with "Bees and Cranberries."

"In the vicinity of Boston, the Cape Cod Cranberry Company are growing cranberries in a large way. When the cultivated bogs were small it was observed that good yields of the berries could be secured; but when the acreage had been increased the crop kept getting smaller and smaller per acre. It was finally discovered that there were too few bees in the vicinity. When enough bees were put around the bogs the yield of cranberries became normal again. More testimony of well known orchardists and many other instances like this given, could be produced to show what the bees are able to accomplish when the varieties are sterile, or partly sterile by their own pollen.

It would be too much to say that all varieties would receive the same amount of benefit from the bees. Some kinds of fruit are fertile to their own pollen; that is to say, the wind and rain cause pollen from the blossoms of the upper limbs to drop down on blossoms below and so pollinate them. But even then results have shown that a cross-pollination makes large and better fruit."

About People

Mr. and Mrs. S. N. Whittlesey with their granddaughter, Katherinne Whittlesey of Fargo, N. D., and Miss B. E. Weeks of Oconto, Wis., recently drove to the Mather district for a friendly call on the growers in that locality. It was rather an untimely visit as so many they wished to see were out blueberrying. Mrs. F. J. Hoffman and daughter, Mrs. Phil. Bennett, Mr. and Mrs. E. K. Tuttle and brother, H. B. Tuttle, and B. R. Mitchell were the only ones found at home. The cordial reception by these friends was heart warming. Health and happiness seemed to prevail. The good crop prospects in view were very gratifying. May their hopes be realized in the carrying through, gathering in, and profitable disposition of the berries now in evidence.

A. Searls and Son are enlarging their water facilities with a 10,000 gallon a minute pump. They believe that anything that is worth doing, is worth doing well.

THE GARDEN IN AUGUST

After August 1st there is not much that can be done in the garden except to reap the fruits of our labor. Something will depend on the season. In southern Wisconsin we may feel quite sure of a light frost any time between September 10th and 20th.

A heavy frost before September 1st is unusual. Crops that escape the early September freeze or are protected may keep on growing until November 1st, some seasons.

There is, therefore, not much use in planting with the expectation of getting a crop. Early maturing varieties of snap beans *might* pull through, but it would be only luck. Some kinds are called "six-weeks" and will make a crop in that time, in the spring, but not after August 1st. Plants don't grow as fast in August as in April or May. Peas are out of the question, as mildew is sure to get them.

There is a chance to get another crop of spinach from seed sown August 1st to 10th if there is plenty of moisture in the ground at the time of sowing. Lettuce and beets for greens may come through all right. Flat turnips will usually mature if sown in August and sometimes rutabagas reach a fair size.

A little cultivation will still be needed and only a little. Lightly stirring the surface soil after a heavy rain or during a dry spell will help, but deep cultivation should be avoided.

Mulching is much better than cultivation. Nothing is better than lawn clippings for mulching garden crops. In lieu of this use anything that will hold moisture. Telephone and other varieties of late peas are particularly benefited by mulching.

Don't be afraid to use poison on the cabbage for the cabbage worm even if heads are partly formed. Remember that late cabbage will never form a satisfactory, solid head if the plants are riddled when young by the cabbage worm.

Early potatoes from your own garden are very nice, but its just a bit wasteful to dig them while the tops are still green and vigorous.

Green lice on cucumber or other plants can be controlled by spraying with a nicotine compound or kerosene emulsion. The emulsion is a trifle cheaper, but the nicotine is usually more effective and no bother boiling soap, shaking, etc. Try "Black Leaf 40," one part to 800 parts water.

There are two ways to raise tomatoes, the stake method which consists of tying one or two plants to a pole or stake 6 feet or more in height and training to a single stem, removing all side shoots as fast as they appear. The other plan is no plan at all, simply allowing the plants to grow as they will. The stake plan is best for the gardeners who are short on room and long on time. If you have plenty of room the other way is best. The one point to remember is this, there is no half way measure. It is worse than a waste of time to trim or prune tomato vines that are not staked. Every time you cut back a shoot, a dozen more appear, increasing the amount of vine growth at the expense of fruit production.

High temperature and humid atmosphere are the two frequent reasons for weak, diseased plants in hotbeds and greenhouses.

MINNESOTA NO. 4 RASPBERRY

This raspberry originated at the Minnesota plant breeding station and is a cross of King and the Columbian. Out of many thousands of seedlings a few of the best were saved and sent out for trial—some of these were very promising but all have been discarded except the No. 4. This has succeeded so well that the planting has only been limited by inability to get plants. A short description would be to say that it is a Red Columbian sucker variety. It is dark red in color, unusually large, a strong grower, iron clad, hardy and free from anthracnose. The quality is mild, much like the Columbian and popular with the public because of its mildness even though it is not as rich in flavor as some other varieties. The writer counted one hundred and six berries on a single cane not over eighteen inches high. If it continues to exhibit Columbian size of berry and bush with Columbian productiveness and the King ironclad hardiness it will displace most varieties of raspberries as a commercial berry.

G. H. Townsend.

DRY!

Everybody knows the old saw, "we eat what we can and what we can't eat we can," but this year we must go that one better: "We will eat what we can, what we can't eat we will can and what we can't can we can dry, if we can."

Canning is first best, drying is second best but not to be despised. This is a subject that will be discussed at the Summer meeting, Baraboo, August 21st.

GARDEN SNAILS CAUSE SERIOUS INJURY TO GARDEN CROPS

Garden snails, slimy, soft-bodied creatures, are doing serious damage in many parts of the state especially in gardens, to bean, corn, lettuce, tomato and potato. They feed at night on the leaves and tender parts of the stem, hiding under rubbish or clods or going into the ground during the day.

Arsenicals are of no value for controlling this pest as the slugs feed freely on poisoned baits without being killed. Dusting air-slaked lime around the plants will give fair success. Bordeaux mixture sprayed on the plants seems to repel them. The slugs may also be trapped underneath pieces of board or burlap placed in the garden and may be collected from underneath these early in the morning and destroyed.

L. G. Gentner.

CAN!

Can surplus fruit and vegetables up to the needs of home consumption and no more. The selling of home canned products may prove disappointing and an expensive experience.

There are, however, perfectly good reasons why every housewife should can fruit and perishable vegetables sufficient for the needs of her family.

First because it means food conservation; secondly, canned goods will be scarce and high-priced. According to present estimates government requirements are expected to include about 25 per cent of the total output of canned corn and snap beans, about one-third the output of canned tomatoes and one-half the output of canned cherries.

These figures come to this office weekly from the Bureau of Markets and the "expectations" of government requirements grow from week to week. Also the government requirements at the cantonments absorb enormous quantities of fruits and vegetables.

While no figures are at hand for perishables the fact that the requirements for August, for cantonments are estimated at 251,570 cwt. of potatoes and 17,310 cwt. of onions will give an idea of the drain on the vegetable supply.

It is therefore plainly the duty of war gardeners and every one else who has corn, tomatoes or any other surplus vegetables suitable for canning to can.

PRESIDENT WILSON'S WARNING

"This war is one of nations—not one of armies—and all our hundred million people must be economically and industrially adjusted to war conditions if this nation is to play its full part in the conflict. The problem before us is not, primarily, a financial problem, but rather a problem of increased production of war essentials and the saving of the materials and the labor necessary for the support and equipment of our army and our navy. Thoughtless expenditures of money for non-essentials uses up the labor of men, the products of the farms, the mines and factories, and overburdens transportation, all of which must be used to the utmost and at their best for war purposes."

Farm and Home Drying of Fruits and Vegetables

Continued from page 171

removal of moisture from the apparatus by a constant inflow of air. The reason is obvious; if the material be placed in a closed box and heated the confined air will very quickly become saturated and no more water can escape from the material. If the heating is continued, the material will literally be cooked in its own juices, since the water content of the products which we dry ranges from seven-tenths to more than nine-tenths of their total weight. Therefore, a drier can be efficient only in the degree that its construction provides for constant removal of the moisture given off by its contents.

Success in drying, therefore, depends upon the stopping by suitable means of the series of changes which begin as soon as the material is cut into pieces and exposed to the air, the employment of a temperature sufficiently high to prevent the growth of organisms—yet not so high as to produce the bursting of cells and loss of juices in fresh material or the scorching of that which has lost most of its water—and the provision of an adequate circulation of air for the prompt removal of the water vapor given off. Simple as these principles are, they have been discussed at length for the reason that most failures or poor results are due to the neglect of one or more of them.—From Farmers Bulletin 984 U. S. Dept. of Agriculture. Free on application.

If it seems necessary to water the garden or lawn plants, do a thorough job. Be sure the soil is moist clear to the root tips.

Selling Apples Direct to the Consumer.

A. K. Bassett, Baraboo.

Several years ago I read a paper before this society about my first attempt at selling my apple crop without handing the commission man the biggest slice of the pie.

Since that time, I have often been reminded, by remarks here and elsewhere, about my "air castle" of eliminating the broker.

That was seven years ago, and I am still at the game. With the present high prices and scarcity of some food products buying directly from producer is a very popular fad, and if present conditions continue for a number of years, the commission man will be out of a job, unless he enlists against the Kaiser.

During the past season I sold about 900 bbls .of apples, of which 40 per cent went directly to the consumer, and the balance went to small retailers mostly in the northwestern part of the state. Of course the small retailer is a middleman in a certain sense, but by selling direct to him, it cuts down freight and cartage, also commission man's fees, and fruit gets to the consumer as nearly direct as we can hope to get in some cases.

With the varieties at hand which were planted and propagated by our forefathers I find it necessary to sell some to the retailers, as I will bring out later on.

After selling in this manner for a number of years, I find we have *two* classes of apples. One kind suitable for selling direct to consumer and retailer; the other kind suitable for retailers only.

Wealthy, Utter, McIntosh, Snow and all the good winter varieties are suitable for selling direct to the consumer as any family can dispose of a barrel easily before they spoil. Retailers, too, can handle these varieties profitably and prefer them to any others.

On the other hand there is the big list of early apples and a good many worthless fall varieties of which Wisconsin seems blessed with a goodly share, which no one can handle as well as the retailer. About the first on this list is the good old Duchess of Oldenburg. A store keeper can sell out a number of barrels in a very short time, but not many families could use a barrel of Duchess before they spoiled. However, I was much surprised last fall at the numerous orders I received from consumers for Duchess. Some even ordering the second and third barrel. Evidently, they canned or dried them, which is a wise plan now-a-days when the early apples can be bought for half the price of winter apples.

Whitney crabs, for which one cannot get a song when shipping to commission house went like hot cakes at the same price as Duchess last fall. These need to be handled rather hastily and a retailer can do it best. I sold all of my own and bought all eight farmers near me had, and could easily have sold 100 bbls. more, if I had had the time and help to harvest them.

Next on the list I wish to mention the less desirable varieties, such as Haas, Fall Orange, Plumb Cider, Longfield, Anisim and others not worth mentioning, of which there seem to be such a quantity around the country. I think the nurserymen more than the fruit growers are responsible for this big population. A consumer never comes back for the second order for any on this list, one taste is usually enough. One fall when apples were rather scarce, I seemed to have a good supply of Haas and Utter. In order to work off the Haas, I quoted prices on mixed barrels of the two varieties. In every case the second orders ran, "Don't send the Haas, send the other apples." "Don't send the red apples, send the white apples." "Send *so many* barrels apples, but don't send any *Haas*," but there are apples infinitely worse than our good old friend, the Haas. There is the Longfield tribe which ought never to have left the boundary of Russia. I hold my breath even to ship a stray barrel to a storekeeper. I never expect to sell this class of apples even of No. 1 or fancy grade, for as much as I get for Wealthy, Utter and Snow, yet it costs exactly as much to produce them, and no one has a good word for them. Why not strike them off the premium list now and forever? You would soon see the trees get the axe and better kinds growing in their places. Consumers can tell the difference no matter how little they may know of apples. One time a couple of good old Dutch farmers came after apples. I had quite an assortment on hand and asked $1.50 per bbl., for No. 1 Haas, Longfield, Fall Orange and that class of apples, and $4.00 per barrel for the Fameuse. In my own mind I was sure they would invest in the cheap varieties, but after sampling apples one man remarked to the other, "Yaw, Felix, you tak vat you lik, but for mine own part I prefer de Fameuse." Each took three barrels of Fameuse and came back later and got some more for their Sunday school and Chirstmas tree. You can't fool them on the "these are just as good" plan.

Financially, selling apples directly is a great relief and consolation. Checks come with the or-

der from consumers, and there are very few retailers left in the business today who are not reliable. The grower makes his own price instead of taking what the buyer offers. Sometimes in case of early apples where I wish to hasten sales I give a free barrel with a club order. This works like magic.

A traveling man, a perfect stranger to me who saw my apples at a store in Hayward, sent me orders from reliable firms, of his own accord. I placed several hundred barrels through him. As I wished to thank him in some substantial way I wrote him to see if he had a home and family somewhere and could use a barrel of apples. This is the answer I received:

Oct. 22, '17.

Mr. A. K. Bassett,
Baraboo, Wis.

Dear Mr. Bassett:—

I have your favor of the 18th inst., and I wish to thank you for your kind offer to send me a barrel of apples.

I have rather enjoyed sending you the orders I have picked up, and my customers have all praised your nice fruit, and good packing. Also wish to mention the fact that they appreciate the way you call their attention to second grade fruit, and the reduction you always make in cases of this kind, in the price.

Enclosed please find my check for $8.50 for two extra barrels of apples. I want one cooking and one eating apples, and will let you pick the kind you think will suit best at $4.00 and $4.50 per barrel.

Trusting I can be of service to you another season, and thanking you for your very kind present, I remain

Very truly yours,
Chetek, Wis. R. F. H.

HARDY OLD FASHIONED PLANTS
OUR SPECIALTY
The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices
WILLIAM TOOLE & SON
Hardy Plant and Pansy Farm Baraboo, Wis.

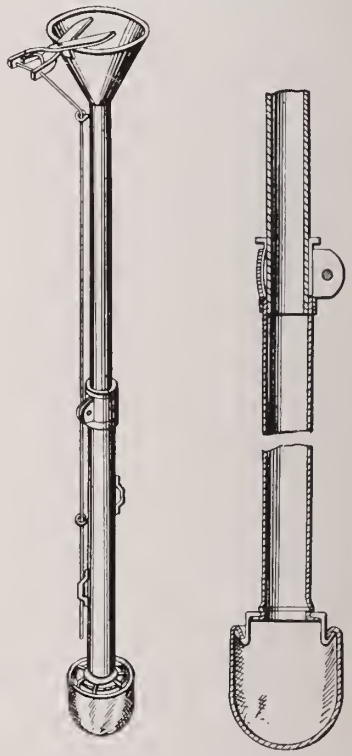
This letter brings out another point, THE PACKING. Unfortunately the person who packs the barrels very seldom opens the same. I am of the opinion that many apples are packed too tight, causing them to be badly bruised. I prefer to pack the good grades with cushions at the heading.

By selling direct one can economize on barrels to a large extent, especially now when barrels are high and we are urged to be saving in every respect. Late years I have been using some sugar barrels. This season I used over 300 of them, which I purchased at the stores and canning factories for 10c apiece.

Sometimes I have had a good chance to sell all my apples to one man for good money, but I have never done this because I wish to keep up my trade. The greatest hindrance is the lack of a sufficient supply of the right varieties. Last fall I tried to buy apples to help out but was unable to do so, notwithstanding the fact that hundreds of bushels of Wealthy went to waste in my own vicinity. But these apples, not being sprayed, were so scabby and wormy I could not place my stamp on them.

I am in hopes that this coming year, in view of the shortage of food products, every farmer and fruit grower who has an apple tree on his premises will get busy and prune and spray, so that every ap-

Sanitary Fruit Picker
PICKS
Fruit of all Kinds
QUICKLY, CLEANLY AND EFFICIENTLY



Don't buy a Step Ladder. Buy one of these FRUIT PICKERS and get all the fruit from the tops of your trees.
The Greatest Little Invention of the Age
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Postpaid anywhere in the U. S.
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The Kingston Orchard Fruit Sack

Patented 1916

Indiana's Best Apple and Citrus Fruit Picking Sack

This new type is very short consequently no injury to the fruit.
The Side Ribs hold top always in place.
Sack fits and will not slip.
No Sack like it yet it embraces all the best features of commercial Sacks.
Fits right and therefore furnishes free use of the body.
Only Sack made with the proper balance—used now by the largest commercial orchards in the United State and canada.

Price each $2.25 One dozen lots $24

The Kingston Orchard
F. O. B. Seymour, Indiana
Prices subject to change

Quality Stock

Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year

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Box 77, Janesville, Wis.

WANTED

Five copies Annual Report of the Society for 1910, cloth bound.

Will pay one dollar a copy and postage for first five received. All copies received over five will be returned and postage refunded.

FREDERIC CRANEFIELD
Secretary
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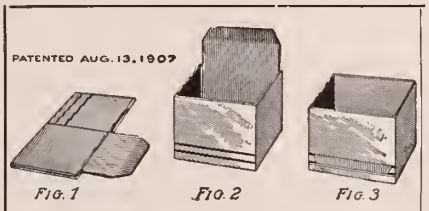
Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices **Baraboo, Wis.**



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As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

ple tree in Wisconsin will yield beautiful fruit which no one will be ashamed to put upon the market where it will gladden the eyes, tempt the mouths and satisfy the stomachs of the thousands who had to go without apples this year.

War is **Our Business**; we can't win by carrying it as a side line.

Malcontent American Residents.

When Mrs. Rose Pastor Stokes was sentenced to prison she said "she didn't mean it, the judge said:

I believe this is part of a systematic program to create discontent with the war, loss of confidence in the good faith and sincerity underlying the conduct of the war, and its ultimate aims, thereby to cause withdrawal of support at home and a relaxation of effort and effect in the field."

Of this the Milwaukee Sentinel says:

"Malcontent American residents (who cannot properly be called citizens at this time) and ill disposed aliens must come to understand, at their peril, that the nation being at war and perhaps fighting for its existence will, if pushed to it, use the penalities of the law against its enemies at home as readily as it uses the machine gun and the bayonet against its enemies abroad.

All of which being said in general, a good many of us might be glad if such morally extenuating circumstances could be found in the case of Mrs. Stokes as to warrant some exercise of executive clemency or mitigation.

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Will be glad to figure on your wants either in large or small quantities.

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Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, September, 1918 | Number 1

"HONORABLE PEACE"

Germany now talks of an "Honorable Peace." Germany, a nation that has lost its soul, a nation that has defiled the very founts of civilization yet dares to speak of **Honor.**

We too want peace but a peace dictated by America, France, England and Italy. We want peace but only when we have driven the Beast from Belgium, from France and across the Rhine; when our victorious armies march thru Berlin and at the door of the imperial palace shout, "Come forth Arch Fiend, you and your foul brood; **Right** is **Might,** America speaks!"

We too want peace, a peace that will insure to all the world that that for which our sons have fought and died shall endure: A peace dictated when Germany is beaten and powerless for all time to threaten civilization, else these boys will have died in vain.

He is a coward and a traitor who asks for less.

F. C.

Home Storage of Vegetables and Fruits.

By C. L. Fitch and J. H. Allison.

1. **Potatoes** are best stored in covered barrels or small bins. In crates or shallow piles they lose too much moisture and shrivel. They must not be stored in piles that are too large, because they heat and may keep poorly or sprout in the center of the pile. No potato should be more than four feet from air. Care should be taken to keep earth out of the potatoes, as much of it in any one place in the pile may prevent ventilation and cause heating and rotting. A few potatoes in a cold cellar are far more apt to freeze than those in a large pile.

Potatoes should be kept absolutely dark to prevent greening by light. Freezing destroys potatoes. No potatoes should be purchased for storage that are dug after the ground is crusted with frost, because it has proven impossible to sort out frosted potatoes. All those touched by frost will spoil, one after another. Do not buy potatoes in sacks that show wet places due to a frosted potato.

Potatoes and many other vegetables that require a storage room should not be too dry or to well ventilated. In some cases a damp earth floor or the sprinkling of the floor helps keep vegetables crisp. It is in this respect that pits excel.

2. **Cabbage** is not injured by moderate frost. Late varieties, perfectly sound and not too ripe, are the only ones fit for storage. To wrap cabbages in paper and to leave on the outer leaves helps keep them crisp. For use after Christmas, most cabbage is best stored frozen solid in a pit. It will stand some freezing-and-thawing. For use after March, cabbage should be stored as kraut.

3. **Onions** need to be thoroughly cured when harvested. Dryness is a first requisite. They should be kept cold as well as dry. A well cured onion should be firm and not readily dented at the base of the tops by the tip of the thumb, when held in the hand. Onions are best for storage if topped about 1½ inches long. They will stand very little freezing-and-thawing, but are uninjured by being frozen solid once grodually if thawed out slowly. Seed onions are best stored frozen.

4. **Beets, Turnips, Kohlrabi, Winter Radishes, Carrots and Rutabagas** are best stored in sand in cellars or caves, or in pits; or in tightly covered boxes or crocks. The object is to keep them cold and to prevent evaporation. Kohlrabi must be tender when stored.

5. **Squashes, Sweet Potatoes, Pumpkins,** must be well ripened and cured. They must be free from bruises. They are best kept on shelves in a very dry place. They need not be kept specially cool. Try to store only well ripened, home grown sweet potatoes.

6. **Parsnips, Parsley, Vegetable Oyster, Horseradish,** may be kept in the ground where grown all winter, but as too much freezing-and-thawing destroys them they should be covered lightly until severe weather and then uncovered to freeze solid and covered again. These vegetables may be stored as suggested in section 7, but the way to have them available all winter and to keep them most crisp is to hold them frozen.

7. **Celery, Endive, Head Lettuce,** may be rooted in earth in a cellar or cave, and with occasional watering may be kept until about Christmas time. Turnips, winter radishes and other vegetables mentioned in sections 4 and 6, also may be stored with the roots planted in sand or earth as above indicated.

8. **Garlic** should be thoroughly cured as are onions, or it may be braided by the tops into strings which are hung up in dry places for curing and storing.

9. **Ground Cherries or Husk Tomatoes** may be stored for some weeks in the husk in thin layers in a dry place, free from frost.

10. **Tomatoes** may be kept until about Thanksgiving by bringing the well matured green tomatoes or the vines with the tomatoes on, into the cellar or cave in the fall. Most of the tomatoes will ripen and be most acceptable as soon as they color up. The tomatoes may be placed on shelves or in boxes, and the vines may be hung up.

Fresh fruits are essential to health. So far as possible all the warring countries are supplying their soldiers with fruit. We should study the storage and use of apples at home.

11. **Essentials in Storing:**

A. Well grown apples, free from injury by disease, worms, or other insects.

B. Hand pick to avoid bruises when "hard ripe," (not ripe enough to eat).

C. Wrap in paper (newspaper is O. K.) to lessen evaporation.

D. Cool thoroughly before putting away.

E. Store in tight barrels or boxes.

(Continued on page 8)

Winter Care of House Plants.

C. Phillipson.

To make home cheerful in the long winter of the North, there is nothing that can compare with flowering Plants. They are a constant delight. Each day brings new leaves, and buds, and blossoms, and we look and wonder and admire. With house plants as with all other things, success is essential to enjoyment. There is pleasure, too, in having plants as much as possible the work of our own skill —grown from seeds or cuttings or trained by our own hands.

Plants, like ourselves, need air, light, warmth, food and drink and these in proper quantities or they will suffer and finally die. The desire in growing Window Plants is that they give us either flowers or foliage during the long winter months. This we can secure only by careful attention to a few necessary details. First of all plants in proper condition must be obtained. We must not expect that those that have given us of their bounty all summer to continue flowering through the winter. Plants for winter flowering should be kept in pots all summer or plants in a proper state must be procured from some florist in early fall. All buds should be taken from plans designed for wintering flowering until about the middle of August. Plants should be brought into the house and placed in position before the winter fires are made, that they may become accustomed to their indoor life. Do not crowd them. Most of our plants are injured by too much heat. Give a little fresh air every few days and all the sunlight attainable. An effort should be made to give moisture to the atmosphere, for our own good as well as the health of the plant. Plants will suffer from a current of cold air, just as their owner would, but both are benefitted by an invigorating breath of fresh air. This can be done by opening a window as far from the plant as possible. Care should be taken, however, that no direct draft blows upon the tender plant. The soil used in potting should be neither too sandy, as it will dry out too quickly, nor too heavy, for this holds the water too long, and is apt to become soggy. How and when to water must be learned by experience.

Water only when the soil becomes dry (except for plants like the Calla Lily and Umbrella Plant which must be kept constantly moist) and apply enough to wet the whole body of earth in the pot. Plants die more easily from drowning than from thirst.

The essentials of success in plant culture are suitable soil, air, light, moderate and regular heat, a moist atmosphere, regular and moderate watering and freedom from dust and foul gas.

Some of the best winter flowering plants for the house are Geraniums, Primulas, Cinerarias, Cyclamen and most of the Holland bulbs. In growing Geraniums never lose sight of the fact that stocky, many branched plants give flowers in abundance, tall spindly plants the reverse.

In potting Primulas care must be taken to have the crown of the plant slightly above the surface of the soil that no water may settle around the crown and cause it to rot.

The cyclamen is particularly adapted for window culture and will give more flowers with less trouble than most other plants.

Of the Holland bulbs the Hyacinths and Narcissi are the easiest to grow. Pot as early in the fall as they can be obtained. Place the bulb with the tip slightly above the surface of the soil, and set away in a dark box in the cellar for six weeks or more or until the pot is well filled with roots. When first potted they should be well watered and thereafter kept merely moist but on bringing to light and heat, they should have water in the saucer most of the time.

Holding the Line.

"We have the task of maintaining the men in that living line made up of soldiers and the people back of that line. We must not run any risk. There must be no narrow margins. We must see that there is plenty of food over there, so that no matter what happens to the shipping in any one month, they are safe. Then we have the chance to win the war and make good.

The food program is a fighting program. We here in this country have the education, we have the brains, we have the loyalty. We must live up to our privilege of backing up our splendid men who represent us in the Army and Navy. Let each of us live each day so that when our boys come back from France we can look them in the eye and say: "I did my share and all that I could do at home."—U. S. Food Administration.

"The spaces of land and sea are nothing where common purposes bind."—General Pershing.

Wisconsin Horticulture

Published Monthly by the
Wisconsin State Horticultural Society
12 N. Carroll St.
Official organ of the Society.

FREDERIC CRANEFIELD, Editor.
Secretary W. S. H. S., Madison, Wis.

Entered as second-class matter May 13, 1912, at the postoffice at Madison, Wisconsin, under the Act of March 3, 1879.
Advertising rates made known on application.

On this little page, which this month the editor claims as his own, there appears the picture of a boy who fought bravely and died; fought and died for you and for me. Reluctantly have I done this, but he, with the thousands of others who have as bravely died, belong now to all of us.

His blood cries, not for vengeance but for justice, and in the name of all those who have sacrificed sons I ask that you do not falter in your determination that this Beast among nations be forever rendered impotent to overturn civilization.

Do not be too optimistic, for it is a long way yet to complete victory. Do not, I beg of you, listen now to false and hypocritical cries of "peace" from the enemy. But rather summon greater courage and determination to **Carry On**. A determination to crush disloyalty at home, to support our boys over there to the end that right and justice may prevail: Else this boy (and all the others) who died for the principles they held most dear, and for this and this alone left their homes, their schools and their country: who, because they believed that "the right is more precious than peace," and each made of "*his breast the bulwark and his blood the moat,*" will have died in vain. What will your answer be?

LIEUTENANT MARIAN C. CRANEFIELD

Born March 22, 1896

Killed in action, July 31, 1918

Under the little crosses where they rise
  The soldier rests. Now round him undismayed
The cannon thunders, and at night he lies
  At peace beneath the eternal fusillade.

That other generations might possess—
  From shame and menace free in years to come—
A richer heritage of happiness,
  He marched to that heroic martyrdom.

Esteeming less the forfeit that he paid
  Than und'shonored that his flag might float
Over the towers of liberty, he made
  His breast the bulwark and his blood the moat.

(From poems by Alan Seeger.)

PREMIUMS AWARDED SUMMER MEETING, BARABOO.

Flowers.

Vase of Asters, one color—First, C. Hofmann, Baraboo.

Display Dahlias—First, Mrs. A. R. Reinking, Baraboo; second, Mrs. F. Horstman, Baraboo.

Display Pansies—First, Wm. Toole & Son.

Display Perennial Phlox—First, Mrs. J. Luder; second, C. Hofmann; third, Mrs. H. H. Tinkham, Baraboo.

Display Gladoli—First, Mrs. H. H. Tinkham; second, Mrs. F. Horstman; third, Mrs. Wm. Shale, Baraboo.

Display Annual Garden Flowers—First, J. F. Hanser, Bayfield; second, Mrs. J. Luder; third, C. Hofmann.

Display Herbaceous Perennials—First, Wm. Toole & Son; second, J. F. Hanser.

Specimen Sword Fern—First, Mrs. Wm. Toole.

Vegetables.

Snap Beans—First, L. B. Irish, Baraboo; second, C. Hofmann; third, Wm. Toole.

Cranberry Beans—First, Wm. Toole.

Two Heads Cabbage—First, L. B. Irish; second, N. A. Rasmussen; third, J. A. Zimmerman, Baraboo.

Six Onions—First, N. A. Rasmussen, Oshkosh; second, J. A. Zimmerman; third, L. B. Irish.

Six Ears Sweet Corn—First, Mrs. G. McGilvria; second, N. A. Rasmussen.

Thre Cucumbers—First, N. A. Rasmussen; second, J. A. Zimmerman; third C. Hofmann.

Three Muskmelons—First, N. A. Rasmussen.

Six Tomatoes—First, N. A. Rasmussen; second, C. Hofmann; third, David Sansum, Baraboo.

Six Beets—First, N. A. Rasmussen; second, Mrs. G. McGilvria; third, J. A. Zimmerman.

Six Carrots—First, N. A. Rasmussen; second, Mrs. G. McGilvria; third, J. A. Zimmerman.

Two Egg Plant—First, N. A. Rasmussen; second C. Hofmann.

Peppers—First, N. A. Rasmussen; second, Wm. Toole; third, C. Hofmann.

Strawberries — First, William Rounds; second, H. Seaborn, Baraboo.

Display vegetables grown by boy or girl under sixteen in home or school garden—first, Raymond Palmer, Baraboo; second, Harold Licht, Baraboo.

Summer Meeting

By Wm. Toole, Sr.

We of the Sauk County Horticultural Society were naturally anxious that the summer meeting of the Wisconsin State Horticultural society at Baraboo should be a success in every particular. A glance over the program which appeared in Wisconsin Horticulture Society gave assurance of a profitable literary treat. It was for us to make the occasion as pleasant as we could. We are pleased with the outcome but it would seem boastful for us to say just how satisfied we are. I hope some one from abroad will tell of how it all seemed to our visitors. We were surprised that our own people were able to make so good a showing in plants, flowers and vegetables. We are grateful to friends Hauser, of Bayfield, Rasmussen, of Oshkosh, and Martiny, of Lake Geneva, with some others who made valuable additions to the various classes of exhibits.

The space for exhibits in the Al. Ringling Theater seemed ample until the show was put up and then we realized the profusion of material competing for prizes.

It seemed as if nothing but a patriotic meeting would be appropriate for the evening, when we consider the definite stand which Secretary Cranefield, and with him the State Horticultural Society have taken for the support of our government in the world crisis. Secretary Cranefield secured for the occasion Professor Kiekhofer to give the address and invited us to furnish the ornamental settings. Miss Gattiker, with her assistants, grouped the flowers and plants on each side of the stage in a way to add much to the beauty of the scenic effects. An introduction of an organ recital and moving pictures, "The Spirit of 1918," was followed by a band concert by the Wisconsin Marine Band. Professor Kiekhofer asked for a good audience and he got it. More than one thousand persons were provided for and fully five hundred were turned away. Closing was a vocal concert by the Baraboo Community Chorus—a patriotic organization which is doing its share in promoting the spirit of patriotism.

Thursday was our holiday and we treated our visiting friends to auto rides through some of our wildest and most picturesque scenery, although short runs over our good roads through good farming country were incidentally included. A stop for lunch at Devil's Lake gave chance for a picnic dinner, with an abundance for every one.

(Continued on page 10)

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

The event of most interest to cranberry growers during the month of August was the annual summer meeting of the Wisconsin State Cranberry Growers Association. The convention was held at the Grand Rapids Street Car Co.'s Pavilion midway between Port Edwards and Nekoosa on the Wisconsin River, an ideal place in the summer time. We are pleased to chronicle more than one hundred wide awake people in attendance—members coming from Tomah, Valley Junction, Mather, Warrens, Black River Falls, Phillips, Berlin, and Minong beside the nearer by points. We were also honored with the presence of Field Agent W. F. Callander of Madison and Mr. McIntyre of the Wisconsin Farmer. Owing to unavoidable delays the short morning session was given up, the time being spent in greeting arrivals. The next event of interest was the basket luncheon, which, after a lapse of two years was a noteworthy one. About seventy-five were seated at the tables and to all appearances did ample justice to the well-filled baskets. The comfort of the meal was greatly enhanced by the serving of hot coffee and ice cream—a most kindly and generous tender of the Wood County National Bank of Grand Rapids. After luncheon the meeting proper was called to order by President Searls who in a few well chosen words presented the needs that at this time should be considered. Most of the afternoon was most profitably taken up with discussions on these various subjects.

A report of a pumping outfit installed on the Williams Cranberry Co's. marsh at Mather was given by W. A. Fowler, the manager. In this months issue we publish the timely paper of Miss Clara S. Smith which all will appreciate. Miss Smith is one of a very few young women actively engaged in the real cranberry work, and by experience knows whereof she speaks. The excellent paper by Mr. E. K. Tuttle of Mather will be embodied in our 1919 annual report and so reach later those not present.

Each year takes its toll among our members. Our Mr. Russell Case of Norway Ridge answered the final summons last March. Mr. Case was one of the oldest and most esteemed members of our association and though of late not able to meet with us, we still felt his interest and now his loss. Messrs. F. J. Hoffman, C. R. Treat and C. M. Seeker were appointed a committee to draft suitable resolutions of regret.

Adjournment was followed by a meeting of the Wisconsin Cranberry Sales Company when among other matters the State Fair Exhibit received added attention.

A little six pound cranberry lady made her appearance at the home of Mr. and Mrs. Hubert Foley the morning of August 21st and received a hearty welcome.

Co-operation on the Wage Question.

I have been requested to write a paper on Co-operation on the Wage Question so will take just enough of your time to present a summary of ideas as expressed by several growers. Co-operation is one essential to success in anything. The growers co-operate in many ways, the Sales Company for instance which has proved its value to us all. Among the individual growers, one does for the other whenever possible, therefore it would not seem impossible for the growers to unite on the wage question.

We all believe in giving a man a fair livable wage but where the trouble presents itself is when one grower pays a livable wage and another who is perhaps a little short of help, or bent on getting all kinds of it, regardless, offers a higher salary. This leaves the first man in the lurch, he probably loses his men. Of course it isn't all the growers fault. Men will come to hire out provided you pay what So and So pays his men and he pays such and such a price. Naturally you feel you have to meet the demand if you wish for help. Some days later you find neighbor So and So never paid or promised to pay such a sum. Your men have told the neighbor's men what they are getting and this information generally causes discontent and probable loss of help. No grower would purposely cause all this trouble for another, but just the same they've done it, all unconsciously.

Clara S. Smith.

There is no vacation on the firing line.

Milwaukee's War Gardens.

Joseph Barr.

The Poet has said that some men are great, some are born great, and some have greatness thrust upon them. I belong to the latter class. It is a great honor indeed to be asked to come here today, and speak to you about the Garden Visitors of Milwaukee and their work. War Gardens without visitors would be as useless as jugs without handles, for War Gardens are born of necessity. So the Gardeners must be officially recognized, and a regiment of 920 men and women from every walk in life, have volunteered their services to supervise, aid, instruct, and urge on the 11,000 children who have planted Gardens, and whose enthusiasm was first aroused by their teachers, in the public and parochial schools of the city. I am a Garden Visitor myself. Did you ever meet a Scot who was not a Gardener?

Now the War Garden movement serves a twofold purpose. When you and I were in school, the teacher did the hard work, we listened, but today we teachers know better, for we have learned that it is better to "learn by doing." And this great wave of Patriotism sweeping over this great land of ours, is one of action on the part of every individual, and we are more interested because we have a real part in it. And it is the same with the children and their War Gardens, they are learning what true Democracy means, but they are not aware of it yet, and they are becoming desirable American citizens, working out their own salvation. In Milwaukee, the Agricultural Commission sold and gave away 11,000 packets of seed, 9,000 tomato plants were distributed free of charge, 14 bushels of potatoes given to worthy folks, and 20,000 leaflets and Bulletins distributed. A course of lectures to prepare the visitors for their work was given, and Mr. Adams, our County Agent, had general supervision and planning of the movement, he deserves great credit for his work. All the children's gardens were card catalogued and a duplicate card given to the visitor. It is too early yet to estimate what has actually been accomplished but no doubt the results will be amazing. The children's gardens are of all shapes and sizes, from 30 foot lots down to a square foot. I managed to interest 25 boys who had no garden space, and they all have one potato plant growing and thriving. Do not smile please, "great oaks from little acorns grow," they are learning something worth while. The lot of the city boy is not smooth, his pleasures, the ball park and the movies. One of the funny papers had a picture of a garden full of weeds, with the sign, "War Garden help preserve it." The funny man had changed the wording and it read "War Garden, help find it." This could not be said of our gardens however. From the literature distributed and the talks given by teachers and others, the little folk were well prepared, and generally speaking the gardens are well kept. In some of the back yards, sunless, and with bricks and stones instead of good rich soil it is a hard matter even to grow weeds, yet in spite of this handicap it is surprising what has been done. A lady visitor reports to me that in a back yard on Reed street on a little plot of ground surrounded by high buildings, there is the finest stand of sweet corn she has ever seen. Children love to be praised, and to have a special visit. The arrival of a visitor is considered a compliment by the family. In the poorer homes, it has been an event that will long be remembered. Tony and Rosie had real ladies and gentlemen visiting them. And this movement must not be allowed to die out. That nation will always be the greatest who encourages its youth in industry and noble living. Its efforts pay big dividends, not in silver and gold, but in firm flesh, red blood, and happy hearts, attuned to the services of the Creator. A great man has said: "He is great who makes two blades of grass grow, where one grew before," so we are encouraged. And there is another phase of the question that I wish you to consider. Inspecting the gardens, I went to one home, poor and miserable it certainly was. Joe was the boy's name; he was ten years old and he had a garden 6 by 12 feet, planted to cucumbers entirely, the plants one inch apart and the rows six inches apart. Blest as I am with ready speech, for the moment I was speechless, but I noticed that the rows were perfectly straight and not a weed in sight. He was a bright little fellow, and I asked him to spell cucumber, which he did correctly. I asked him a great many questions about the soil and its preparation, and his answers were correct every time. And so advising him to thin out his plants, and giving him all the encouragement possible, I left him and in that hour there came to me a vision of what this War Garden Movement can become in the life of the nation. In keeping his lit-

tle garden clear of weeds, Joe was all unconsciously keeping the weeds out of his soul, and working out his own salvation. And if our Patriotism is more than mere lip service, this should be a stimulus to us, to continue in the work of helping the least of these, so that on the day of our accounting we may be rewarded with the "Well done, servant."

We are well satisfied with the progress made this year, and each succeeding year should show improvement, and the rising generation taught true conservation, a thing their parents seem to have neglected. And after the war is over and we are eating white bread again, this movement will have reached such proportions that the work will have to be shared by your society. And so, ladies and gentlemen, resolve right now that you will do everything in your power to boost your society and to hold up the hands of your officers even until the going down of the sun. You have every reason to be bold, the state of Wisconsin is behind you. Let your speech and actions be prompt and emphatic. Don't be like the man who for many years, in giving his testimony at prayer meeting, always referred to the last words of his dying brother, and their influence upon him, until one day a preacher asked him what his dying mother said, the old man stammered and said, "It is such a long time ago, I have forgotten." Nothing definite about that, but let it be as definite and emphatic as the speech of the Scottish boy, "This mother was a widow woman."

And your Society and we War Garden Visitors have a common aim. We love our Country and our Flag; we desire to make the world a better place to live in, and to that end we bend our energy. And what better way can we begin than by helping the children? They are just entering into the battle of life; their hearts are strong and their hopes are high. Their sun has just tiptoed over the mountain top, and they peer ahead with eager, tender eyes. And if at times the Eternal Hope burns low in our hearts, we must look for inspiration, and it can be found in work such as I have discribed to you.

HOME STORAGE OF VEGETABLES AND FRUITS

(Continued from page 2)

12. **Season of Ripening.** Do not attempt in home storage to keep apples which ripen in summer or early fall. Those that are hard ripe just before winter are the ones to store. Pears must be stored while green and hard. With the greatest of care they will not keep like apples.

Varieties of apples like the Wealthy are summer or fall apples in central latitudes, while in Minnesota or Wisconsin they are late fall or winter apples.

Essentials in Home Care. Coolness: Below 40 degrees F. for most of the season of storage.

Dampness: Earth floor covered with slatted floor to make it cleaner, or concrete floor sprinkled down once in a while. Not too much ventilation.

Darkness for vegetables, particularly potatoes, and for canned fruit.

We are heirs of great happenings. Shall we surrender our inheritance?

The Kaiser's Consolation.

Two letters published side by side in the New York Times form a significant contrast. One, from the kaiser to a German woman who lost nine sons in the war, is as follows:

"His majesty, the kaiser, hears that you have sacrificed nine sons in defense of the fatherland in the present war. His majesty is immensely gratified at the fact, and in recognition is pleased to send you his photograph, with frame and autograph signature."

The other is the letter sent by President Lincoln to Mrs. Bixby during the civil war. It follows:

"I have been shown in the files of the war department a statement of the adjutant-general of Massachusetts that you are the mother of five sons who have died gloriously on the field of battle. I feel how weak and fruitless must be any words of mine which should attempt to beguile you from the grief of a loss so overwhelming. But I can not refrain from tendering to you the consolation that may be found in the thanks of the republic they died to save. I pray that our Heavenly Father may assuage the anguish of your bereavement and leave you only the cherished memory of the loved and lost, and the solemn pride that must be yours to have laid so costly a sacrifice on the altar of freedom."

Here is the illustration of a contrast not only between civilizations. The kaiser is superlatively himself in the note of "consolation" to the bereaved mother; he is also the spokesman of a nation, as was Lincoln in the beautiful letter to Mrs. Bixby. A poor, old German mother suffers the loss of

(Continued on page 10)

Keep Your Liberty Bonds

HOLD to that bond. You invested to help send the boys across. They are over now, at grips with the German monster. You expect them to hold on—hold on till the last vestige of autocracy is crushed out of him. Then you, too, must hold on—must keep your enlisted dollars invested on the fighting line.

It isn't the hooray of a campaign that wins a war. It's the will to hang on, to make sacrifice today, that tomorrow may bring victory.

And your investment. Those bonds are the safest investment you ever made. Don't be lured into exchanging them for the "securities" of some suave get-rich-quick operator. Big returns may be promised, but the bigger the promised returns the bigger the risk.

If you have to have money, take your bond to any bank and use it as collateral for a loan. There is no security the banker would rather have—nothing on which he will lend more willingly.

Don't use bonds to buy merchandise. The average merchant, accepting your bonds in trade, sells them immediately, thus tending to lower their market price and taking away from the buyer of your bonds the ability to lend a corresponding amount of money to his Government. Liberty Bonds are meant to help your country at War; are meant for investment and to provide an incentive for saving and a provision for the rainy day.

Hold fast to your Liberty Bonds. Hold fast for the sake of the boys "Over There". Hold fast because it is good business.

UNITED STATES TREASURY DEPARTMENT

Contributed through Division of Advertising

United States Gov't Committee on Public Information

This space contributed for the winning of the war by

THE PUBLISHERS OF THIS MAGAZINE

THE KAISER'S CONSOLATION

(Continued from page 8)

nine sons in a war of the kaiser's making. All that the ruler of the German empire and the partner of "Gott" has to say is that "his majesty is immensely gratified at the fact!"—his majesty, be it noted, not Germany or the German people.

To recompense a mother for the loss of nine sons he offers her his photograph, framed and autographed. An even trade, surely!

The mother is said to have joined the street beggars in Delmenhorst Oldenburg to keep hunger away. But she has the autographed photograph of the kaiser, nicely framed, and the consciousness that he is "immensely gratified" at the loss of her nine sons. What German mother could ask more? What German mother can hope for more? What a sickening requital,—and how long will German mothers, and the sons of German mothers, tolerate such—what shall we call it! Nothing in the language supplies a term strong enough to characterize the kaiser's vulgar egotism and blasphemous effrontery.—Madison Democrat.

"Right and liberty have obliterated space and the ocean to bring France and America together."—President Poincare.

"The American people will gladly make any sacrifice in consumption and in the production of foodstuffs that will maintain the health, comfort and the courage of the people of the Allied countries. We are in fact eating at the common table with them."—President's Message to the Conference of Allied Food Controllers in London.

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The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices
WILLIAM TOOLE & SON
Hardy Plant and Pansy Farm Baraboo, Wis.

Summer Meeting

(Continued from page 5)

The local attendance was reasonably good. We would have liked a larger attendance from abroad and feel sorry for those who chould not share in the good time. Many pleasant acquaintances were formed with people from all parts of the state. There were so many good friends with us from Oshkosh that that locality will always seem nearer to Baraboo than it has in the past. I wish space permitted to give the names of all of the persons who helped make the 1918 summer meeting a grand success.

(A review by a visitor will appear in the October number).

What It Takes to Feed a U. S. Soldier for a Year.

Beef, 475 pounds,
or
Bacon, 275 pounds.
Wheat flour, 413 pounds.
Potatoes, 458 pounds.
Beans, 55 pounds.
Prunes, 27 pounds.
Coffee, 26 pounds.
Sugar, 73 pounds.
Syrup, 7 pounds.
Condensed Milk, 11½ pounds.
Butter, 11½ pounds.
Lard, 11½ pounds.
Vinegar, 3½ pounds.
Salt, 13½ pounds.

Sanitary Fruit Picker
PICKS
Fruit of all Kinds
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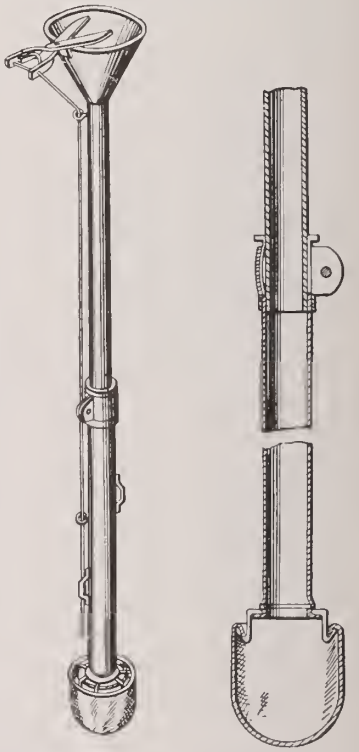

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The Greatest Little Invention of the Age
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Cider Making.

C. R. Tuttle, Baraboo.

Cider is made for two purposes —for vinegar and drinking and cooking.

Sweet cider intended for drinking purposes, should be heated to the boiling point for a few minutes and then placed in air-tight containers while hot and without sweetening.

Boiled cider is made by reducing cider to a consistency of five gallons to one, but may be modified to suit the use and taste of the customer.

In making sweet cider or boiled cider, the cider should be cooked as soon as pressed. Do not attempt to cook cider that has been allowed to stand for even a short time. Freshness and cleanliness are absolutely essential in making a perfect cider.

Cider Vinegar—The important and essential process in the manufacture of vinegar is fermentation. To make vinegar from cider, it must undergo two distinct fermentations. First, the one forming alcohol from sugar, being called alcohol ferment. The second—the one forming acetic acid from alcohol, being called the acetic or vinegar ferment.

In the fermentation of cider, heat plays a very important part, both in the first and second fermentations. Uniformity of temperature is essential. Care must be exercised, therefore, to avoid sudden and extensive changes.

When the cider comes from the press, it should be run into fermenting tanks where it changes into alcohol. As soon as the alcohol ferments start to work to produce alcohol, the acetic bacteria attack the alcohol and convert it into acetic cider.

At home fill the barrel or cask and place it in the sun on the south side of building. Be sure to put in the cellar before freezing weather. A warm cellar or furnace room is best.

It will pay anyone having a large orchard to have a small vinegar generator, or take their apples to a cider mill where there are vinegar generators for the quick process or manufacture of vinegar.

Acetone, manufactured from powder, also for treating the acetic acid is used for making of cloths used on air planes and other uses.

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Indiana's Best Apple and Citrus Fruit Picking Sack

This new type is very short consesequently no injury to the fruit.
The Side Ribs hold top always in place.
Sack fits and will not slip.
No Sack like it yet it embraces all the best features of commercial Sacks.
Fits right and therefore furnishes free use o fthe body.
Only Sack made with the proper balance—used now by the largest commercial orchards in the United States and Canada.

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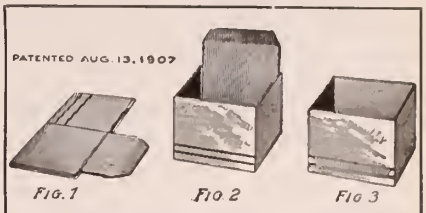

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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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NO COVENANTED PEACE WITH GERMANY

"America, unless we repudiate civilization and abandon humanity and put a premium on savagery and brutality, can make no covenanted peace, no peace by agreement or negotiation with Germany. It would be a covenant with hell, a partnership with infamy.

Nor would such a peace secure peace, except so long as it suited Germany. We can judge the future only by the past, and to Germany sacred treaties are scraps of paper only. Germany's whole history is a record of national treachery, national bad faith, national dishonor, national murder, and national infamy.

Of the old men and children murdered, of the women and girls ravished, of the noncombatants taken from their homes and deported to work for their conquerors, of the merchant ships sunk and passengers and crews murdered, of the hospital ships sunk, the hospitals and unfortified cities bombed, of the mutilation and murder by crucifixion and otherwise of wounded and captured soldiers—of all this beastliness there is plenty of evidence, evidence that no one can disbelieve.

The best answer to German peace propaganda is sinking more U.boats, sending more men to France, speeding up our work along every line, and a heavy subscription to the fourth liberty loan. Peace must mean the triumph of right and justice, the defeat of Germanism, not a truce with it, not a compromise with it." —U. S. Bureau of Publicity

Some Spring Flowering Bulbs.

A. Martini

The amateur and professional gardeners always have to plan months ahead of time, and just now our thoughts are on bulbs for spring flowering and as we draw our mental pictures of what our gardens shall look like after cold and dreary winter months, we must be thankful to mother nature for the number of varieties of spring flowering bulbs she so kindly has given us. From her also we can learn how to plant so as to get the best effects. I refer to planting in masses of one variety. Behold the fields of daisies, the golden rod, the hardy aster, the gentians, the violets, the hepaticas or liver worts and so forth. Goddess Flora sees that her children are well grouped and so can we learn from her how to beautify our own homes to please the eye and elevate the soul.

American grown bulbs are as yet not grown in sufficiently large quantities to supply the general market and while the industry is developing it will be years before we can get along without the product from Holland that has cheap labor as well as climatic conditions greatly in its favor of production. While we still wait for the bulbs to arrive from Holland let use make our plans.

How much money are we going to spend? Five dollars, ten, twenty or more? Well, whatever the amount do not buy the cheapest grades and remember that if properly planted the bulbs will endure for years.

Good Crocus varieties are: King of the whites,—purpurea—and mammoth yellow. We are often advised to plant these all over the lawn. This is not good taste unless the lawn should prove to be a grass plot. Rather plant in irregular patches along the shrubbery and colors separate, please! Crocus need lots of sunshine. Plant about ½ inch deep and five inches apart, in moderately rich soil—(never have fresh manure come in contact with any kind of bulb.)

Other small sized beautiful flowering bulbs are the Squills or Scilla Sibirica, blue and white, Chionoa, blue, Grape hyacinths, blue and white and Snowdrops; all of them look best when planted in rather large clusters. They are perfectly hardy and perennial by nature.

The hardiest of the Narcissi that also lend themselves splendidly for naturalizing are, first, the true Narcissus poeticus, pure whote flowers, the flat crown of which has a scarlet ring and is everybody's favorite. Stems carry one flower. Thevariety Elvira differs in having many flowers to a stem and is pure white with a yellow cup. Of the short yellow trumpet varieties the one best and hardiest is Sir Watkin, a strong grower, and Stella, which blooms a little earlier. Ajax princeps belongs to the large trumpet varieties as does Golden Spur, and both are among the hardiest of that class. Of all yellow varieties plant Van Sion or Orange Phoenix. The best white is Alba plena odorata.

For planting in circular beds or long borders, Tulips are best adapted, also planted against shrubberies give wonderful effects if grouped in separate colors and if planted deep enough—8 inches—may be left undisturbed in beds that are later used for annuals. Avoid planting alternate colors in one row, space 6 or 8 inches each way. Varieties are many, some of the best and cheapest are: La reine, white, Cottage Maid, pink, Chrysolora, yellow, Artus, red, Kaiserkroon, red edged yellow, a strong grower and most effective when planted alone.

Late flowering and really wonderful tulips are Gesneriana major, bright scarlet, 24″ tall, very large flowered, and in contrast Bouton d'or, rich, deep yellow, short, round flower. Picotee, also called Maiden Blush or Ida, white-edged pink. Very popular of late years, have become the Darwin Tulips, extra strong growing and late flowering. Try a few of the following and in another year you will want to plant more: Pride of Harlem, old rose, Mme. Krelage, violet rose, Painted Lady, cream white tinted lavender, Philippi de Commines, dark purple. Glow, bright scarlet.

Do you know the Parrot Tulip? If not, get a few in a mixture and you'll stand amazed beholding the large, deeply fringed flowers in variegated bright red and yellow colors.

All of the aforementioned bulbs are perfectly hardy and need no winter protection unless the planting should be delayed until the ground freezes hard, in which case protect the earth from freezing before planting and after planting if soil be dry give good watering, then cover good with dry leaves which, however, must be removed very early in spring and before growth appears above ground, otherwise the tender leaves are easily injured by frost. Early planting, of course, is always preferable and all bulbs will

continue making roots if unhindered by frost.

Hyacinths are better adapted to indoor gardening; unless it be in public parks or large estate plantings, we seldom find them in the cottage gardens. They are considerably more expensive. Out of door culture is the same as with Tulips, only they must be covered with leaves or straw, as they are less hardy. Some of the best single varieties are: Gertrude, rose pink, Moreno, pink, La Grandesse, white, Mme. Vander Hoop, white, Czar Peter, light blue, Grand Maitre, sky blue, King of the Blues, dark blue.

Why the Leaves Change Their Color.

It requires no vivid imagination to picture Mother Nature going about these days with a liberal supply of paint with which she colors the leaves of the trees and other plants and thereby produces the vivid tints which characterize the foliage of this season. In reality the change of coloring is the result of certain chemical processes which take place in the leaves.

The change is not, as many people suppose, due to the action of frost, but is a preparation for winter. All during the spring and summer the leaves have served as factories, where the foods necessary for the trees' growth have been manufactured. This food making takes place in numberless tiny cells of the leaf and is carried on by small green bodies which give the leaf its color. These chlorophyll bodies, as they are known, make the food of the tree by combining carbon taken from the carbonic acid gas of the air with hydrogen, oxygen, and various minerals supplied by the water which the roots gather. In the fall when the cool weather causes a slowing down of the vital processes the work of the leaves comes to an end. The machinery of the leaf factory is dismantled, so to speak, the chlorophyll is broken up into various substances of which it is composed and whatever food there is on hand is sent to the body of the tree to be stored up for use in the spring. All that remains in the cell cavities of the leaf is a watery substance in which a few oil globules and crystals, and a small number of yellow, strongly refractive bodies can be seen. These give the leaves the yellow coloring so familiar in autumnal foliage.

It often happens, however, that there is more sugar in the leaf than can be readily transferred back to the tree. When this is the case the chemical combination with the other substances produces many colored tints varying from the brilliant red of the dogwood to the more austere red-browns of the oak. In coniferous trees, which do not lose their foliage in the fall, the green coloring matter takes on a slightly brownish tinge, which, however, gives way to the lighter color in the spring.

While the color of the leaf is changing, other preparations are being made. At the point where the stem of the leaf is attached to the tree, a special layer of cells develops which gradually sever the tissues which support the leaf. At the same time Nature heals the cut, so that when the leaf is finally blown off by the wind or falls from its own weight the place where it grew on the twig is marked by a scar.

Although the food which has been prepared in the cell cavities is sent back to the tree, the mineral substances with which the walls of the cells have become impregnated during the summer months are retained. Accordingly when the leaves fall they contain relatively large amounts of valuable elements, such as nitrogen, and phosphorus which were originally a part of the soil. The decomposition of the leaves results in enriching the top layers of the soil by returning these elements and by the accumulation of humus That is why the mellow black earth from the forest floor is so fertile. But if fires are allowed to run through the forest and the leaves are burned, the most valuable of the fertilizing elements are changed by heat into gases and escape into the air. As a result, forests which are burned over regularly lose their soil fertility even if no apparent damage is done to the standing timber.—*U. S. Dept. of Agriculture.*

Hydrangea Paniculata flowers cut before they are frosted will last well into the winter if put into a dry vase.

Clean up the garden as early as possible and plow or spade it this fall. Many insects will be destroyed by doing this.

As soon as the frost has killed the asparagus foliage, it may be cut off and burned. Young plants may be started by saving and planting the seeds when ripe.

Wisconsin Horticulture

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Horticulture at the 1918 State Fair.

It is doubtful if any other state fair in the country afforded a finer exhibit in any department than that of the horticultural department at the Wisconsin fair this year. And this, in spite of handicaps, the greatest of which is the squat, box-like structure in which it was housed.

The great merit of the exhibit was its **finish**. The flowers, fruits and vegetables were of high quality and were arranged to best advantage, but without the finishing touches these alone would have passed as but little more than ordinary. The decoration of the building with southern smilax, ferns, palms and flowering plants supplemented by a fountain; the absence of fakirs, the hiding of rough edges and the entire absence of any untidiness were the features that changed the horticultural display from a mere "exhibit" of the products of orchard and garden to the most attractive feature of the fair. Great credit is due the Milwaukee florists' club for suggesting and carrying out the plan of decorations.

The tray idea of exhibiting apples, tried for the first time, was certainly highly successful, and never again will pecks of apples be shown huddled in heaps on flat-top tables.

The amateur flower show, one of the mainstays of the horticultural exhibit, was given a little more room this year than usual, and as a result increased 100 per cent. in attractiveness.

The cranberry growers, too, caught the spirit and their exhibit this year excelled in general appearance any previously shown, by a wide margin.

The vegetable show was high in quality, but far from being representative of either the professional or amateur gardens of the state, but when it is considered that this is only the second year that vegetables have been recognized at the fair as belonging to horticulture, allowances may be made.

For the present we must be content with this building, but when normal conditions arrive it is the duty not alone of every exhibitor and official but of every horticulturist in the state to urge an appropriation for a new building, the biggest and best on the grounds.

TELL THE KAISER.

(J. C. Lionne in the Gulf Coast Lumberman):

Germany wants to know what the United States is fighting for.

She thinks the sinking of neutral ships without warning isn't enough to bring us in.

All right! Let's tell her!

We're going to fight for outraged women!

We're going to fight for crucified nuns!

We're going to fight for little children with hands and arms missing!

We're going to fight for nameless mutilated soldiers!

We're going to fight for innocent thousands strewn upon the bottom of the sea!

We're going to fight for Belgium—outraged and desecrated as no nation in the previous history of the world has ever been!

We're going to fight for France—that magnificent nation of heroes—bled with defending civilization against the Power of the Beast!

We're going to fight for England—which chose the path of honor black-tinted with despair—when the little nation she had sworn to defend was set upon as by a wild beast!

We're going to fight for Italy—which took up the cause of Right against the power of Wrong—terrible though she knew the cost must be.

We're going to fight in defense of those principles of human liberty which were laid down nineteen centuries ago by that first great teacher and preacher of human rights—the Man of Galilee!

Every iota of the philosophy and creed of hate, and blood, and violence, and bestiality, and diabolic cruelty, and the human enslavement that mark every footstep of the kaiser and his cohorts of Hell—are in direct and damnable opposition to every thought, word and deed of the Man of Galilee!

This is therefore no fight of democracy against autocracy!

It is no battle of nation against nation!

It is no contest of man against man!

It is a titanic struggle between right and wrong; between the philosophy of Jesus Christ and the powers of evil, through the earthly defenders of each!

And we're going to fight—fight—fight side by side with our fellows in the cause of humanity, until there is no vestige left on all this great earth, of the powers that—defying God and man—precipitated this cataclysm of blood and tears.

There is only one sentiment in this whole broad land today, and the man who does not recognize it must indeed be deaf, dumb and blind; and that sentiment is a dogged determination deep down in the very bowels of every man that we are going to fight until we have justified Italy; saved England; swept immortal France free of the Hun; liberated Belgium; avenged so far as is within human power the countless crimes of Germany against civilization; broken the Hindenburg line and swept the army of the beast as chaff before the wind; humbled the empire of hell; and—please God—rid the earth of the kaiser and all his fell breed!

If anyone asks you, tell them that is what we're fighting for!

A Successful Meeting.

Motoring from Oshkosh at 11:30 a. m. on Tuesday, Aug. 20, by way of Beaver Dam to Madison, thence on to Baraboo we got the first glimpse of the town as we reached the top of the hill at Pansy Heights, the home of the Tooles. The evening was ideal, the trip pleasurable in every detail and we reached Baraboo at just 9 o'clock p. m.

On Wednesday morning we went to Ringling's Theater where the program was held and which with its beauty enhanced by the exceedingly creditable flower and vegetable display on the stage, presented an unusually pleasing appearance and was somewhat out of the ordinary.

The program was of exceptional merit, every number being of interest and educational value to both men and women and we were sorry not to have been able to devote more time to the discussions. The session of the Woman's Auxiliary in the late afternoon was thoroughly enjoyed by all the ladies present and the organization promises to be a valuable asset to the society in general as time progresses.

The evening program was different, very different from anything our society has yet known. The address by Prof. Kiekhofer, "If Germany Wins," and the rare musical treat by the Wisconsin Marine band and the Liberty Chorus of Baraboo though not dealing directly with Horticulture touched the heart of every true American horticulturist, and was well worth traveling across the state to hear. The fact that several hundred people were unable to gain entrance in the spacious theater speaks for the merit of the program and the interest manifested therein.

The 40-mile auto trip through the surrounding country on Thursday, climbing the beautiful hills, at times being able to view the landscape for miles distant, was indeed greatly appreciated by one living in a level country and brought back memories of childhood days when coasting was a prominent feature of enjoyment. The many interesting sights including Mr. Toole's pansy fields; the Foley orchard, unquestionably the finest orchard in the state, his storage cellar on the side hill; Mr. Bassett's Ski-Hi orchard, including the state trial orchard and the various other orchards seen en route present positive proof that Baraboo and vicinity rank high in the fruit industry. The pruning demonstration by Prof. Roberts in the Baer orchard was of intense interest and value to apple growers.

Especial thanks to the ladies who served the excellent repast at Devil's Lake for they realize the fact that horticulturists do "love to dine."

Returning to Baraboo at 4 o'clock p. m., we left immediately for Oshkosh via Portage, Kingston and Markesan, arriving home at 10 o'clock p. m. without the slightest mishap. We saw a vast stretch of country with bountiful crops of grain and corn which was indeed gratifying to us at this critical time.

Let us hope that our summer meetings, improving in merit and attendance, as they surely are, offering an annual vacation outing of educational benefit to us all, affording something for us to look forward to with interest, may continue as long as horticulture exists in the state of Wisconsin.

With kindest regards and sincere thanks in behalf of the visiting horticulturists to the people of Baraboo, we will look forward to our summer meeting in 1919.

Mrs. N. A. Rasmussen.

When the war is over there will be only two kinds of men left—the men who did and the men who didn't.

I Am Public Opinion

All men fear me!

I declare that Uncle Sam shall not go to his knees to beg you to buy his bonds. That is no position for a fighting man. But if you have the money to buy and do not buy, I will make this No Man's Land for you!

I will judge you not by an allegiance expressed in mere words.

I will judge you not by your mad cheers as our boys march away to whatever fate may have in store for them.

I will judge you not by the warmth of the tears you shed over the lists of the dead and the injured that come to us from time to time.

I will judge you not by your uncovered head and solemn mien as our maimed in battle return to our shores for loving care.

But, as wise as I am just, I will judge you by the material aid you give to the fighting men who are facing death that you may live and move and have your being in a world made safe.

I warn you—don't talk patriotism over here unless your money is talking victory Over There.

I am public opinion!

As I judge, all men stand or fall!

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WISCONSIN HORTICULTURE

BULBS FOR WINTER AND SPRING FORCING.

James Livingstone.

The time for the planting of Dutch bulbs will soon be here again, and a few instructions about their culture for winter and spring forcing would not be out of place at this time.

A great many varieties of tulips, hyacinths, narcissus, etc., are suitable for forcing, but the varieties mentioned in this article will be found most suitable for the ordinary house culture. The bulbs are very reasonable in price, and with intelligent care in handling them will give good results, and afford great pleasure for the amount of money and labor expended on them.

All varieties of Dutch bulbs should be planted as soon as possible after their arrival in this country, (which is usually in September or early in October) and should not be delayed much after the first of November. In bulb culture ordinary good, rich garden soil, with a fair amount of sand mixed with it, will give good results. In planting bulbs of hyacinths, tulips or narcissus in pots or pans don't press the soil too firmly under the bulbs as, if the soil is too firm, the roots don't get freedom to work, and then bulbs are apt to get raised clear out of the soil. The roots are then exposed and suffer greatly. The entire results are unsatisfactory.

Some people are very fond of hyacinths, while others object very much to their strong odor in a living room. They should never be placed in a bed room, or in a room where a sick person is, as the odor is very objectionable in a close room. The French Roman hyacinths are very pretty, and are easily forced. They should be grown in pots or pans, and can be planted quite closely, almost touching each other, and are very effective when grown in pans with five, six or more bulbs. This variety is not hardy, and should not be subjected to frost. After planting they should be given a good watering, and placed in a cool part of the cellar. Four or five inches of sand or coal ashes should be put over them. Leave them there for six or eight weeks, or until they are well rooted, when they will be ready to bring into heat and light. The large flowering single and double Dutch hyacinths can be grown in much the same way as the Romans, but they do not force so readily, and require a longer period in the dark as, to get good results it is absolutely necessary that they be thoroughly rooted. Much of the failure in forcing hyacinths, tulips and narcissus, is caused by bringing them into heat and light before they are well rooted.

In growing the Dutch hyacinths use a good, rich loamy soil. The large bulbs can be grown singly in five inch pots, and will give beautiful spikes, or they can be grown in pans of various sizes, the number of bulbs according to the size of the pan. They should be given more room than the Romans, as they are much stronger growers. The bulbs should be placed in the pan so that the top of the bulb is but barely covered with soil, and when covered the soil should be about an inch below the rim of the pan to give room for watering. Give a good watering, and put away in a cool place covering with sand as already advised. Don't be in too big a hurry bringing them into the light, as the longer you leave them in the dark the more satisfaction you will have. From 10 to 12 weeks is not any too long. Dutch hyacinths can also be grown in hyacinth glasses which are made for that purpose. Fill the glasses with clear soft water so as to almost touch the base of the bulb, put a piece of charcoal in each glass to keep the water sweet, and put them away in a dark, cool place till well rooted. Even when they are well rooted it is sometimes hard to get the flower spike to develop properly. To get the spike to rise above the foliage it is a good plan to start their growth in a semi-dark place, and when the spike is growing vigorously bring them into full light. Another good plan is to put a collar of pasteboard or stiff paper round the pot or glass six or eight inches above the top. This will help to draw the flower spike up above the foliage. The flower spike of a well grown Dutch hyacinth is very heavy, so they should always be tied to a neat stake to keep them from growing crooked.

Tulips should be grown in much the same way as advised for hyacinths. The bulbs should be planted close together in pots or pans, leaving the tip of the bulb just above the soil. Eight or ten bulbs planted in a six inch pot or pan makes a very pretty show in bloom. They should be given a good watering, and then put away in a cool, dark place with the covering of sand as already advised. If the cellar is furnace heated, it will probably be too hot and dry for good results. It is better to put the hardy varieties of tulips, hyacinths and narcissus out doors

(Continued on page 21)

The Home Orchard in Wisconsin

Marshall W. Sergeant

The climate and topography of Wisconsin are such that commercial fruit-growing is likely never to become general throughout the state. There is, however, no valid reason for limiting the establishment of home orchards to the most favorable locations. They should be everywhere, and our slogan should be, "An orchard for every farm." The kinds of fruit that can be grown successfully in some parts of Wisconsin are few, but there is no farm between Lake Superior and the Illinois line that cannot produce one or more kinds, and in many cases a wide variety. I shall now attempt to show, first: why home orchards are relatively scarce and unprofitable, and second: how their status may be improved.

The first mistake that leads to failure is often in the purchase of the trees, for the farmer frequently orders them of an agent who is a stranger to him, and who represents an unknown company in some distant state. The representatives of these distant concerns are usually better qualified as salesmen than as horticulturists, and they are not capable of advising the buyer intelligently regarding the trees he should plant. Consequently, when the farmer also knows little concerning the matter, as is often the case, the trees he orders are more likely to be of the size and variety that is cheapest, or those that the agent has been instructed to "unload," than they are to be those best adapted to his local soil and climatic conditions.

After the trees are ordered they are all too frequently forgotten until during the rush of spring work, when their arrival is announced by a card from the express office, telling the recipient to call and pay for a package of nursery stock. The farmer leaves his other work, often rather reluctantly, gets his trees, and sets them out, perhaps following instructions that were sent with them, but just as likely according to his own ideas. At best, they are usually planted in a hurry, and a liberal shovelful of manure is often dumped into each hole to make up for deficiencies in other respects. Whatever the size, quality, or variety of the trees may have been, they are now set out, and our next step is to see what becomes of them.

Some three years ago, I spent five months in traveling through rural Wisconsin, and being interested in the matter, the condition of farm orchards was one of the things that I noticed particularly. Cropping the young orchard with some cultivated crop was almost universally practiced, and as it grew older it was turned into pasture, or hayfield, or was neglected entirely to compete with grass and weeds. I did not see above three orchards during the entire summer where any system of tillage was practiced, and spraying and pruning were not much more common. Many of the older trees served as turkey roosts, clothesline posts, for hanging up scythes, or for tethering-stakes. Trees girdled by mice or rabbits, trees dying from blight; trees with leaves curled by the work of lice; trees infested with tent caterpillars; trees grown up to water sprouts; trees with dead, dying or windbroken tops: all these were, and are, far too common sights. (To be continued)

New Asparagus Strain Routs "Rust" Disease.

Ten years of introducing, testing and hybridizing asparagus from all parts of the world by J. B. Norton, a plant breeder in the United States Department of Agriculture, has resulted in the development of a new strain of asparagus that is not only larger, more uniform, and more productive than the old varieties, but is highly disease-resistant—a virtue that American asparagus heretofore has lacked. Development of the new strain is expected eventually to stamp out the "rust," a destructive disease that swept over the country a few years ago, leaving the asparagus fields brown and dead and wiping out the profits of the growers. Commercial quantities of the new type in Washington, D. C., recently sold for more than double the price of other asparagus.

Turkey is starving, Germany pinched and Austria rioting for food. The Allies are well fed and full of fight, thanks to Uncle Sam who invited them to sit down to his table a year ago—he has been passing around the victuals ever since.

THE ALLIES' FOOD MARGINS ARE THIN

If the United States fails to send the food that is asked of us we lessen the perilously thin margin between mere food-lack and food disaster, and the Teuton yoke settles a little more heavily on Europe's galled shoulders—but heaviest of all on broken Belgium.—U. S. Food Administration.

BULBS FOR WINTER AND SPRING FORCING

(Continued from page 19)

in some corner of the garden. Choose a level, well drained spot, and set the pots as close together as possible, water them well and cover to a depth of six or eight inches with sand or sifted coal ashes. Then put a good layer of coarse stable manure or leaves over them, and as the weather grows colder add coarse litter or leaves, enough to keep out the frost. After the bulbs are rooted it won't hurt them to get frozen, but it is better to keep the frost out so the more material that is put on top of them the easier it is to get them out in cold weather.

The single and double early tulips are both suitable for forcing, and if planted in October should be ready to bring in to the heat and light about the latter part of January. If they have been cared for properly, they will be well rooted by that time, and will be sure to give thorough satisfaction. The following single varieties of tulips will be found to give good results: Cottage Maid, rosy pink white striped; Proserpine, glossy pink and one of the earliest to force; Rose Luisante, a very beautiful deep pink; Chrysolora, yellow; Yellow Prince. These two yellows are very sweet scented. La Reine, white, Keizerkroon, red and yellow, Thomas Moore, apricot orange. There are also many other varieties that are suitable. Among the double varieties the following are good: Couronne d' Or (crown of gold), rich golden yellow, Imperator Rubrosum, bright scarlet, Murillo, white suffused with pink, and many others.

Narcissus are also valuable for forcing, and should be given the same treatment as advised for tulips, except the Polyanthus varieties, which will not stand freezing. The paper white Grandiflora and Chinese Sacred Lily belong to this class, and give good results grown in bowls of water, with gravel or pebbles around them to hold them in place. The ordinary narcissus or daffodils should be grown in soil, and treated like tulips. The following varieties will be found to give excellent results: Emperor, Empress, Golden Spur, Von Sion. There are other varieties of bulbs such as Jonquils, crocus, snowdrops, grape hyacinths, scillas and others that are pretty that can be forced easily if the same method is followed as with hyacinths and tulips. The whole secret is to give them time to get well rooted before trying to force them.

If the bulbs are planted at the time advised, and left in a dark, cool place in the cellar, or outdoors, and covered as advised, the plants will have made several inches of growth by the latter part of January, and it will be an easy matter to bring them into bloom in any ordinary room with a sunny window.

Sirup from Apple Culls.

For those who have a great many second grade apples and culls on hand, the making of apple sirup is profitable. The acids are removed by boiling the cider with precipitated chalk (calcium carbonate, or whiting). This neutralizes the acids of the cider, converting them into insoluble calcium salts, which settle to the bottom and are removed by decantation.

Add three-fifths of an ounce of precipitated chalk (obtainable at any drug store) for each gallon of cider used, bring to a boil, and boil vigorously for five minutes, removing the foam and scum as fast as formed. Pour into containers as tall as are available. Two-quart mason jars will do, or even big preserving kettles. Let stand quietly for four or five hours. Then carefully pour off the clear liquid, throwing away all the sediment at the bottom. Boil the clear liquid rapidly down to a sirup, removing all scum. The sirup should boil at 220 degrees Fahrenheit.

The sirup is placed in bottles or mason jars and sterilized by placing the containers in boiling water for 15 minutes. If the whole outfit is then allowed to cool slowly, the little sediment in the sirup will settle to the bottom and leave a clear, bright, very pleasing mild sirup, with a delightful apple flavor.—J. J. Willaman, plant chemist, University Farm, St. Paul.

Gas Masks—You Can Help.

Every American has the chance for direct war service that will save the lives of soldiers. Carbon is needed to make millions of gas masks for the American Army. Cocoanuts have furnished much of this material, but cocoanuts mean ships, and during the present shortage material for carbon must be found nearer home. The pits of apricots, peaches, prunes, olives, dates, cherries and plums and the shells of Brazil nuts, hickory nuts, walnuts and butternuts make carbon for masks that will outlast the most diabolical of the German gases.

Here is work for all, every home, church and school. Urge

the boys and girls to scour the woods for nuts and incite your patriotic organizations to rivalry in making collections. See that the work is started in your neighborhood. Place collection boxes in schools, churches, banks and stores, and above all in your own home so your boys and girls can see the pile grow. It takes two hundred peach stones or seven pounds of nut shells to furnish carbon for a mask and save the life of an American soldier. How many masks can your neighborhood furnish?

Dry the pits and shells before turning them in to the nearest Red Cross chapter. This organization is in charge of collecting all material.

October Garden Work.

"Clean culture plays a most important part in the fight which must be waged against the insects which menace the success of the home gardener's efforts," say the entomologists of the United States Department of Agriculture. "Cleaning off all the rubbish left over from last season's gardening aids materially in reducing the numbers of the overwintering forms of the insect enemies of the vegetable garden, whose activities are only too great in any case.

"Cutworms, which hide in the soil in the day time and come out at night to feed on the tender growth and cut small plants entirely off, wireworms that damage the tubers of potatoes and other other root crops, and a host of other insects, winter under brush and rubbish on the earth or a few inches under ground. Where they can find protection during the cool weather of winter, conditions are ideal for their survival, and the warm days of the spring will bring them out in countless numbers to feed upon the tender foliage of the young garden truck. Neighboring weed patches shelter many forms.

"Leaves, stems, and other litter should never be allowed to accumulate up to the time of planting, or there will be thousands of insects the coming year where there were hundreds last season. Weeds should be cleared up and burned, together with all garden rubbish.

"The soil should be thoroughly worked over in autumn to destroy such insects as may be spending the winter on, or a few inches below, the surface."

Wanted, Baldwin Trees in Wisconsin.

The Bureau of Plant Industry at Washington, through Prof. Close, is endeavoring to locate hardy Baldwin apple trees and has come to Wisconsin for help. Many of the Baldwin orchards in the eastern states suffered severely last year, although the Baldwin is considered iron clad in that section. Owners of Baldwin trees, which passed through last winter uninjured, please report to this office and oblige Prof. Close, who writes as follows:

"We are making an effort to locate a hardy Baldwin apple tree on its own trunk. As you know, the apple and other fruit trees were very seriously injured by the winter in the northern portions of the country and if we can locate a Baldwin tree which is real hardy it will be an acquisition to apple culture.

I have had some reports on certain Baldwin trees which were less injured than other Baldwin trees standing a short distance away, but in each case this difference in hardiness could be accounted for by the locality, soil

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J. E. Baer estate of 40 acres, known as the "Gladmont Fruit and Stock Farm." Every foot is under cultivation. Seven acres orchard, fine buildings, macadamized road, splendid view of Baraboo. Two and one-half miles southwest of Baraboo court house. For further information address

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and other conditions. We would want to eliminate as much as possible all local conditions which would tend to make one tree hardier than another and feel sure that hardiness is one of the vital characters of the tree which we hope to find.

If you are able to locate anything that will answer our purpose we shall certainly appreciate it and will thank you in advance for any assistance you give along this line. C. P. Close,
Pomologist."

Eau Claire War Garden Report.

We have, aside from our Regular Home and Market Gardens, 218 acres divided as follows: 130 acres listed as school gardens. There are 888 individual gardens in this class. 88 acres in the Normal Grounds, Boyd, Wagner & Dells Paper & Pulp tracts, divided into 669 individual gardens, this making a total of 218 acres, 1,557 gardens.

Each of the ward schools will hold a vegetable show the second week in September. General or adult class will show at High School Auditorium the third week of September.

Conditions of gardens are first class and it would hardly be possible to have them as a whole more productive.

F. T. Brunk.

An abundant harvest—a thankful heart—and safe reserves.

Every sign proves that home-canners have reached the goal, 1,500,000,000 quarts. This, by the way, insures the home pantry, for the Government needs most of the commercial pack for the Army.

More About Minnesota No. 4 Raspberry.

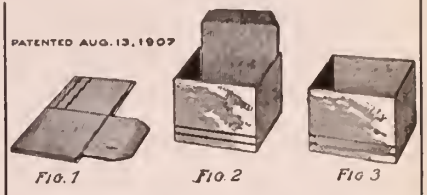
This variety began bearing the first of July and continued until the last week in August. Its fruiting habits are much like its Columbian ancestor.

Our planting last year was late and was subject to extremely wet weather early and extremely dry weather later in season. The cane growth was small, so that very large berries were not expected. The largest were only an inch in diameter, and the diameter of four together was an eighth less than four inches. Next year we expect berries big enough to talk about. The record of the Minnesota justified the expectation of plenty of berries for everybody when it is in general cultivation.

G. H. Townsend.

Conservation is the All-American job—an army of four million soldiers must be fed from this year's crop.

Squashes should be picked before being frosted and they require a dry, warm place for storage.



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Write for catalog and prices Baraboo, Wis.

Common Barberry Must Go.

Further proof that there is a close relationship between the rust of barberries and of wheat and other cereals has resulted in active campaigns to eradicate the shrub in many communities. Two rather striking cases of this close relationship were observed recently in Indiana by representatives of the United States Department of Agriculture. In one locality a field of wheat, along one side of which grew a barberry hedge, was practically destroyed by the black stem rust. The case was so clear that 17 farmers held a field observation day under the guidance of the county agent and immediately drew up resolutions, in which they stated that the relation was so clear that they wished to go on record as favoring legislation to eradicate all barberry bushes from the State. In another case a hedge of barberry and two deep plantings were found on a farm upon which a wheat field was so badly affected that the crop was a partial failure. A second field near by was very seriously affected also, as well as a number of fields in the vicinity. Similar cases have been observed in a number of other States, and public sentiment favoring the eradication of the common barberry is growing rapidly. It is said that Japanese barberry does not harbor the wheat rust.

Food saving was at first a fad; then a patriotic service; now a habit.

The 1918 food reserve is the only safe insurance for 1919 food supplies.

OUR greatest achievement is not in men, or guns, or ships, or railroad yards. Our greatest achievement is that we have changed our minds. We had thought that here between these two oceans we were aloof from the world. We now understand that we have a part in it; we now understand that though our eastern boundary in geographical terms is still the shore line of the Atlantic, our eastern boundary in terms of national welfare and the liberty of our people is that line from Belgium to Italy where our flag flies.—Clarence Ousley.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

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Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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The Jewell Nursery Company
Lake City, Minnesota

McKAY NURSERY COMPANY
MADISON, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, November, 1918 | Number 3

SHALL THE GUILTY ESCAPE PUNISHMENT?

On this date, October 29th, the air is filled with rumors of peace and of an armistice which may lead to an early ending of the war. God grant this war may end soon, but not too soon; not until that horde of murderers, despoilers of womanhood and perpetrators of the most revolting crimes known to history, called the German army, be well-nigh annihilated; not until the balance be driven back whence they came, driven relentlessly so that they experience something, if only a little, of the misery and anguish of the peoples of suffering France, Belgium, Servia and Armenia. Let no peace come until the victorious armies of America and our allies march as conquerors thru this land of "kultur" to receive the humble obeisance of every German man, woman and child in the land.

And then? When peace is finally declared what then? Will we extend the right hand of fellowship to this bloodthirsty gang or will we demand the death penalty for the actual criminals, the Kaiser, Hindenburg, Ludendorff and every prince, politician, general, naval commander, aristocrat and beaurocrat who has been responsible for the murder and mutilation of civilians, killing of wounded in hospitals and crimes without end. Shall the guilty escape?

F. C.

Lectures on Horticulture, Prepared by E. S. Goff.

Our older members revere the memory of E. S. Goff, one time professor of Horticulture in the University of Wisconsin, who died in 1902.

It was the rare privilege of the editor to be associated with Prof. Goff for almost eleven years and at his death to come into possession of the larger part of his library.

Some time ago in looking over some neglected pamphlets there was found pencil written copies of a series of lectures on horticulture prepared in 1889 or 1890, but not completed as indicated by certain supplementary notes. While these are not of the high order of his later works, being prepared for his first classes, they are so distinctive of the Goff of later years that the editor feels no hesitation in publishing them: the first of the series follows:

Definition of Horticulture.

Horticulture may be broadly defined as the knowledge of rearing fruits, vegetables and ornamental plants. The word is derived from two Latin words, hortus, a garden and cultura, culture. It means, therefore, garden culture, or the knowledge of cultivating gardens. In this country we apply the term garden especially to a piece of ground devoted to the culture of vegetables, but so far as I know, this is the only country that so restricts it. The oriental idea of the garden included what we distinguished as the orchard and lawn. The word horticulture may therefore in its broadest signification, very properly include the culture of fruits, fruit and shade trees and ornamental plants.

Its Advantages as an Occupation

Considered as an occupation, horticulture possesses advantages which need only to be rated at their real worth, to render it a most attractive field of Labor.

Among these advantages may be mentioned, first, considered from the business standpoint, the pursuit of almost any branch of Horticulture offers a tolerably certain means of gaining a livelihood. It is true that the success of all crops grown from the soil is, to a certain extent, dependent upon conditions beyond human control; it is also true that products of Horticulture must stand upon their own merits in the markets of the world the same as those of other occupations. But the unquestionable testimony of statistics clearly shows that a far greater percentage of those who embark in practical horticulture prove successful in providing for themselves a comfortable livelihood than of those who engage in mercantile or manufacturing occupations. I will mention a few examples of what energetic young men have accomplished in a business point of view, in the field of horticulture, and that without specially favorable conditions. What these men have done, there are no good reasons why others may not do, by pursuing their methods. And I may add that without their methods, success in almost any other department of business would have been impossible.

Messrs. G. H. and J. H. Hale, of So. Glastonbury, Conn., two brothers, with their widowed mother, commenced growing small fruits about 1868 on a small worn-out New England farm worth not more than $4,000. They were obliged to run in debt for tools, horses and manure. They have supported themselves in the meantime, and have so far improved their farm that its market value is now at least $20,000, besides providing themselves with many home luxuries such as horses, carriages, etc. They now not only cultivate their original farm but have leased fifty-two additional acres, all of which is now devoted to fruit culture. Their gross income the past season, from peaches alone was $21,000. This is not a phenomenal growth in wealth you may say, truly, but it is the story of a healthy, moderately rapid development as the result of industry, frugality and business tact. Quoting Mr. Hale's own words from a recent private letter, "My own idea is that brains and muscle in horticulture will give any young man always fair cash returns, but better still, a more pleasant, happy homelife and work than can be found in any other occupation."

I might multiply examples but this is unnecessary. Scattered all through the length and breadth of our land are beautiful homes, supplied with all the necessaries and all the wholesome luxuries of life that have grown up through the slow but comparatively sure profits accruing from horticultural pursuits. And I might also add instances where great wealth has been accumulated from the same sources. One of the wealthiest capitalists of the city of Rochester, the Hon. Patrick Barry, for many years vice president of the American Pomological Society, and author of Barry's Fruit Gar-

den whose wealth is reckoned in millions, has amassed his fortune largely from the nursery and fruit growing business. Living within scarcely more than a stone's throw of the cottage I left at Geneva last spring on coming to Wisconsin, lives another successful man, whose wealth is also expressed in millions—Mr. William Smith, of the firm of W. & T. Smith. This gentleman I am told, commenced his business career in this country something more than 30 years ago by growing strawberries on a little plat of ground about three acres in extent and selling the fruits in the neighboring village of Geneva. The business of this great firm has, I believe, been confined almost exclusively to the nursery and its development is only the natural result of the application of sound business principles and enterprise.

Horticulture, then, offers a field not only for a reliable means of securing a livelihood, but of financial success as well. But this is not its only advantage as an occupation.

Its Food Contributions

No other occupation contributes so much to the direct food supply of the family as certain branches of horticulture. The pomologist and vegetable gardener may revel at home in many of the delicacies of the market at least possible cost and in their freshest possible condition. While I would not uphold this as the highest argument in favor of pomology and gardening as callings, it is not to be despised, especially as the very products that these occupations contribute are of the most wholesome kind.

It Promotes Open Air Life

Health is perhaps the greatest boon God has given to men. Without it all other blessings are of trifling importance. With it, life may be happy even with very meagre opportunities. The outdoor life, the moderate labor, and the wholesome food that are the natural accompaniments to the work of the horticulturist promote health in perhaps as great a degree as any human occupation. Many who have found health waning under the confinement and excitements of city life have sought and found restoration in the freedom and peacefulness of horticultural pursuits. For this reason, if for no other, any young man, especially one of feeble constitution might do well to choose horticulture for his life work.

Its Allurements to Study

Again, horticulture furnishes constant allurements to study. Its science is, as we shall see later a fabric woven of threads from almost all other sciences. It deals, on the one hand, with the intricate chemistry and physics of the soil, the atmosphere and the sunbeam, and on the other with the inscrutible phenomena of life with its enemies and diseases. Its pursuit offers fields for investigation that are worthy the highest genius of any age. While I would not uphold horticulture as an easy passport to fame, it is none the less true that some of its devotees have gained wide spread and lasting repute from their labors in this field. Many of the links in Mr. Darwin's famous chain of evolution were gathered from the domain of horticulture. The experiments of Thomas Andrew Knight have caused him to be revered as the father of scientific horticulture and the writings of Vilmorin, London, Downing, and others are doubtless known and read throughout the educated world.

The economic importance of some of the still unsolved problems in horticulture is such that he who aids in solving them will confer a blessing upon his whole race. It shall be my aim, in the course of these lectures, to point out, as we come to them, some of these problems, sometimes with hints as to their possible solution.

Its Moral Tendencies

One of the most important arguments in favor of horticulture as a vocation is its moral tendencies. Few other occupations bring their workers into more constant and intimate communion with nature—the great teacher whose lessons are always salutory. The horticulturist cannot defraud nature if he will. Dealing with her he reaps what he sows. Her teachings are on the side of industry, frugality, temperance and reverence. If she allures him to study, she also points with a thousand index fingers to the divine Creator and Father for whom and by whom are all things.

Recapitulation

By way of recapitulation, I mention again as the plausible claims that horticulture offers to the young man who is casting about for a life work

1. A tolerably certain means of livelihood.
2. Its food contributions.
3. It promotes open air life.
4. Its allurements to study.
5. Its moral tendencies.

Wisconsin Horticulture

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The Annual Convention

The Annual Convention and fruit show will be held in Madison January 8, 9, and 10, 1919. In general character and purpose the program will be like that of last year—a serious, earnest, win-the-war effort. There may not be any flag waving or shouting, there was none last year, but there will be a lot of mighty serious discussion of timely problems.

Vegetable gardening will be discussed at length in all its different aspects because it is the most important subject before us today, because it is the branch of horticulture that lends itself most readily to an increase in food production.

At this writing, late in October, the fate of the world as to peace or war in 1919 is trembling in the balance, but whatever the outcome, we dare not relax our efforts. Food will be needed more the coming year than in the past and it will require not only every effort we can put forth toward increased production, but also our best efforts toward conservation. At the convention we will study ways and means to produce more fruits and vegetables. We will also talk about keeping up the home so that it may be the "home beautiful" when the boys come back.

There are many other things that we will talk about that will be of benefit not only to ourselves but to all the state. The only way to get the best of all this is to attend the convention at the State Capital, Jan. 8, 9, and 10. The program will be in the next, December, number of Wisconsin Horticulture.

The Fruit and Vegetable Show

If the promises of apple and vegetable growers are fulfilled the show in connection with our Convention will be the most extensive and attractive ever staged by the Society. The new trays used for the first time at the State Fair will be used to supplement the plate exhibit.

A glance at the premium list will show that the small grower has been considered no less than the larger ones. A tray of apples is trifle less than a peck and many members who have small orchards can often beat the big grower, who is trying to cover the whole list.

Therefore, every one who has a plate or peck of choice fruit or a fine sample of vegetables save them for the Convention. Read the list.

Not Too Late For Bulbs

November, at least November, 1918, will not be too late to plant spring flowering bulbs. Any time before heavy freezing prevents planting is time enough, although somewhat earlier planting to enable the bulbs to make a good root growth may be better.

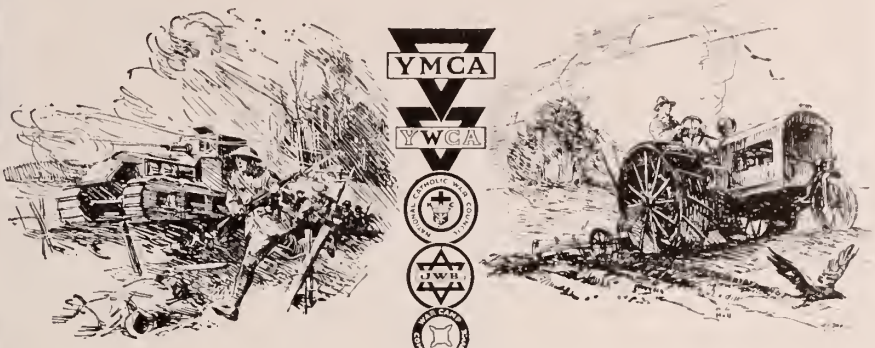
After planting wait until the surface soil freezes an inch or more, then cover with straw, coarse litter, or, where available, evergreen branches, but not with a heavy covering of leaves.

Keep in mind to uncover *early* next spring, just as soon as frost is out and the shoots appear take off *all* covering, even if the nights are still frosty. Tulips and narcissus will stand lots of freezing in the early stages of spring growth, but will not stand a heavy cover after growth has started. Read and study the excellent articles on bulb culture in October Wisconsin Horticulture.

Syrup from Sugar Beets

Last spring war gardeners were advised by the United States Department of Agriculture to plant sugar beets for the purpose of making from them a sirup for family use.

The practicability of such work has been disputed. We shall be pleased to publish stories of beet sugar syrup making. Send them along giving details.



Over there Over here

THROUGH mud and rain, through gas and shrapnel, our boys are pushing on to Victory It's a task that tries the souls of strong men. They *must* have rest and recreation.

At the canteens, they buy the little comforts of life at cost. In the war-service huts, they find everything needful to write the letters you receive. They attend a show, see a "movie" or hear good music —all free. Always, they find in the hut secretary a friend. They forget for a little while the grim scenes of war and return to duty refreshed. These are some of the things that keep fighting men at top notch.

YOURS is the task of growing the food these fighting men must have. The toiling millions in the munition factories, arsenals and shipyards also look to you for sustenance. And they do not look in vain.

Your work is vital to winning the war and you are doing it manfully, mindful of Country, forgetful of self. You are working early and late, putting forth your strength unsparingly. You have produced bounteous crops that feed a hungry world. Yet to you are spared the comforts of home and the presence of loved ones. Yours are the privileges of earning and giving.

Give to "keep good men good and brave men strong." Give to bring cheer to those who are daring their all for you and yours. And when the boys come home victorious, you can honestly say, "I have done my part, too. I have backed you to the limit."

Seven Allied Activities, all endorsed by the Government, are combined in the United War Work Campaign, with the budgets distributed as follows: Y.M.C.A., $100,000,000; Y.W. C.A., $15,000,000; National Catholic War Council (including work of the Knights of Columbus and special war activities for women), $30,000,000; Jewish Welfare Board, $3,500,000; American Library Association, $3,500,000; War Camp Community Service, $15,000,000; Salvation Army, $3,500,000.

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United States Gov't Comm. on Public Information

This space contributed for the Winning of the War by

WISCONSIN HORTICULTURE

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

With the great cry for help along all business lines and especially in agricultural pursuits, it was feared cranberry growers might not be able to gather in the season's yield. We believe, however, enough help was secured so that the crop in the various districts of this state was successfully harvested. The shortage of sugar also caused some anxiety, lest there might not be a demand for our fruit. Reports coming in prove these fears groundless, and the demand will equal the supply. When white Karo syrup can be obtained a very good, rich colored, jellied sauce can be made without a particle of sugar by using 1 pint of the white syrup with 1 pint of boiling water to 1 quart of cranberries. Placing all together over a brisk fire, mashing every berry as it swells, removing from stove soon as all berries are broken or mashed. Sugar and white syrup may be combined in any proportion totaling the amount given above. The greater the proportion of sugar, the finer the sauce of course.

The American Cranberry exchange have been making experiments as a war measure, to save sugar and at the same time preserve the use of the cranberry as an economical fruit-food product. They are featuring sugar saving recipes. We present some of them for the benefit of Horticulture readers with ten reasons why they should use them:

1. They taste good—properly cooked are delicious.
2. They are distinctive; nothing on earth just like cranberries.
3. They are not only good themselves, but they make other foods taste good. They are appetizers.
4. They are beautiful. They adorn the table.
5. They are healthful. Improve digestion.
6. They are inexpensive.
7. There are ways of preparing them without much sugar.
8. They are an American product.
9. They keep well.
10. They are so easy to prepare, and no waste.

Cranberry Sauce.

1 quart cranberries, 1 pint water, ½ level teaspoon salt, 1 cup sugar. Bring water and salt to a boiling point. Put the washed berries into the pint of boiling water and cook rapidly for 5 minutes or until the skins of the berries have broken. Cool slightly add sugar, bring to boiling point, and cook slowly for additional 5 minutes.

2 cups cranberries, 1 cup water, pinch of salt, ¾ of a cup of sugar. Boil cranberries with water and salt until soft. When nearly cool stir in sugar. Enough to serve six persons.

Strained Cranberry Sauce.

1 quart cranberries, 1 pint water, ½ level feaspoon salt, ¾ cup of sugar. Bring the water and salt to boiling point, add the cranberries and cook rapidly for 5 minutes. Strain, pressing as much as possible of the cranberry pulp through the strainer. Add the sugar, bring to boiling point and cook slowly for additional 5 minutes.

Cranberry Jelly.

Cook until soft the desired quantity of cranberries with 1½ pints of water for each 2 quarts of berries. Strain the juice through a jelly bag. Measure the juice and heat it to the boiling point. Add one cup of sugar for every two cups of juice; stir until the sugar is dissolved; boil briskly for five minutes; skim, and pour into glass tumblers or porcelain or crockery molds.

One peck of cranberries and 2½ lbs. of sugar make 10 tumblers of delicious jelly.

Cranberry Butter.

Three pints of cranberries, ½ cup water, 2 cups sugar, (or 1 cup sugar and 1 cup of syrup).

Cook the cranberries and water until the skins of the fruit are broken; then press through a sieve, and cook this pulp until it becomes quite thick, add the sugar (and syrup if you use it) and cook for ½ hour over a very gentle fire, stirring constantly.

When slightly cool turn into jars, and cover closely. Cranberry jelly or butter makes a delicious and healthful spread on hot biscuits, bread, buttered toast, or cake.

Cook cranberries in porcelain lined, enameled or aluminum vessels only.

Grub-stake your home from the farm and garden; the railroads **must** carry food and munitions for soldiers.

Meet Dr. Fracker

He is our newest state entomologist and succeeds Dr. E. D. Ball, resigned. Dr. Ball goes to Iowa. Iowa is a good state; Wisconsin is better. Those of our people who know Dr. Fracker know that he is all right and will make good. To those who don't know him, the editor wishes to say that he is worthy of your confidence, that he is competent and anxious to serve you. Learn to depend on him and you will not be disappointed; give him your support and you will be helping yourself as well as him.

Our readers will be interested in knowing something about Dr. Fracker. Here are some of the details:

Born, Iowa, 1889: Graduate Buena Vista College, Iowa, 1910, A. B. Degree.

Assistant in Zoology Univ. of Michigan, 1910–11.

Instructor Iowa State College, 1911–12 (M. S. Degree).

Deputy State Entomologist, Iowa, 1912–13.

Fellow in Entomology, Univ. of Illinois, 1912–13 (Ph. D. Degree).

Instructor in Economic Entomology, Univ. of Wisconsin, 1914–15.

Assistant State Entomologist, 1915–18.

Appointed Acting Entomologist, Oct. 15th, 1918.

A Word of Greeting

By request of the Editor, Dr. S. B. Fracker, who succeeds Dr. E. D. Ball as state entomologist, extends this word of greeting:

JUST A WORD

The writer is glad of this chance to express his appreciation of the interest and cooperative spirit of the horticulturists during the four years he has spent in Wisconsin. He has come to love the state's beautiful hills and valleys, her developed southeast and frontier northwest, her progressive people and their work. It is a privilege to be able to help work out the problems of a state whose agricultural and horticultural possibilities are scarcely touched. These problems will change from year to year and many of them may be hard to solve, but the most important factor will be the spirit of mutual assistance which has always characterized the fruitgrowers, gardeners, and florists of the state.

S. B. Fracker.

Covering Roses

For the detail of covering roses and tender shrubs see the October and November issues of Wisconsin Horticulture, vol. 1 to date.

The following points are of value:

Don't cover too early. Cut out some of the surplus wood that interferes with tying and bending, but leave real pruning until spring.

Don't try to protect from cold, it can't be done and isn't necessary, the winter covering is to protect the bushes from changes in temperature.

The Peace Our Soldiers Want

The Stars and Stripes, the official newspaper published by the soldiers of the American Expeditionary Forces in France, says editorially about the enemy peace offensive:

"Let the weak hearted who are dreaming of a compromise; let the pacifists who are talking a peace by agreement; let the sideliners who have had enough of war; let the secretly inclined pro-Germans who think this war should end without a decision—let them one and all know once and for all that for the American Expeditionary Force there is no such word as 'Peace' with the Huns unbeaten. The man who talks of peace today, except through victory, is a traitor."

The enemy peace offensive is likened to the action of German machine-gun crews in the Vesle fighting, when they fought and killed Americans until they were surrounded, then shouted "Kamerad."—Bureau of Publicity.

A Regular Boche Bee.

(The Finder.)

As I walked along the paths this morning plucking flowers, I found, in the yellow heart of a lady's slipper, a little brown bee. My first impulse was to shake him out of his honeyed abode, but as I looked at his velvety body and sunlit rainbow wings a feeling of foolish tenderness surged over me. Perhaps there were baby bees at home that would starve if papa bee did not bring back honey; and how useful the little creature was, carrying the pollen from flower to flower! So I moved on, leaving him unmolested. But even as I turned away, thinking the pure-sweet thoughts, the damned thing stung me.

We cannot administer the food problem on the basis of the present food shortage. We must prepare for long continuance of this shortage.

UNCONDITIONAL

PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Jan. 8, 9, 10, 1919.

	1st	2nd	3rd	4th
1. Best collection of apples, not less than 15 varieties	$10 00	$6 00	$4 00	$2 00
2. Best 5 plates (5 varieties) commercial apples for Wisconsin	5 00	3 00	2 00	1 00
3. Best Plate Ben Davis	1 00	75	50	25
4. Best Plate Dudley	1 00	75	50	25
5. Best Plate Fameuse	1 00	75	50	25
6. Best Plate Gano	1 00	75	50	25
7. Best Plate Gem	1 00	75	50	25
8. Best Plate Gideon	1 00	75	50	25
9. Best Plate Golden Russett	1 00	75	50	25
10. Best Plate Grimes Golden	1 00	75	50	25
11. Best Plate Jonathan	1 00	75	50	25
12. Best Plate King	1 00	75	50	25
13. Best Plate Maiden Blush	1 00	75	50	25
14. Best Plate Malinda	1 00	75	50	25
15. Best Plate McIntosh	1 00	75	50	25
16. Best Plate McMahan	1 00	75	50	25
17. Best Plate Newell	1 00	75	50	25
18. Best Plate Northern Spy	1 00	75	50	25
19. Best Plate Northwestern Greening	1 00	75	50	25
20. Best Plate Patten	1 00	75	50	25
21. Best Plate Pewaukee	1 00	75	50	25
22. Best Plate Plumb Cider	1 00	75	50	25
23. Best Plate Salome	1 00	75	50	25
24. Best Plate Seek-no-further	1 00	75	50	25
25. Best Plate Scott Winter	1 00	75	50	25
26. Best Plate Tolman	1 00	75	50	25
27. Best Plate Twenty Ounce	1 00	75	50	25
28. Best Plate Utter	1 00	75	50	25
29. Best Plate Wagener	1 00	75	50	25
30. Best Plate Wealthy	1 00	75	50	25
31. Best Plate Windsor	1 00	75	50	25
32. Best Plate Wolf River	1 00	75	50	25
33. Best Plate York Imperial	1 00	75	50	25
34. Best tray of each of the above named varieties	3 00	2 00	1 00	75
35. Best 5 trays of any of the following varieties: McIntosh, Northwestern, Wealthy, Tolman, Wolf River, Fameuse, Gano, Salome, McMahan, Seek-no-further, Windsor	10 00	6 00	4 00	2 00

Separate samples must be furnishe for each entry

Asparagus All Winter

Crisp, fresh asparagus tips can be obtained in a continuous supply this winter by forcing. For a large supply crowns of the plants may be forced in the field or in hothouses, while the small gardener may bed a few crowns in the cellar to furnish tips for his own use. Specialists of the Department of Agriculture describe this winter gardening practice at present not a general one in this country, but of considerable importance in Europe.

In building a forcing house over the rows in the field, rough boards are used for the walls. These are covered with a cheap grade of roofing paper. The roof is formed of hotbed sash. The houses are usually heated with steam or hot water or by means of flues. Some growers depend on the heat of the sun, but this is satisfactory only during the spring.

METHOD OF FORCING.

Lifting the crowns from the field and placing them under greenhouse benches, hotbeds or in cellars is the commoner method of forcing. The crowns are plowed or dug up late in the fall when the soil is moist, so as to have as much soil as possible adhere to them. They are then left exposed in the field until frozen when they are covered with litter or removed to a shed in order to prevent alternate freezing and thawing which is harmful. The crowns then are stored in a cool cellar or pit and bedded as needed to supply a succession of shoots.

When ready for forcing, the crowns or roots should be brought

SURRENDER

36. Best exhibit Pears	1 00	75	50
37. Best exhibit Crabs	1 00	75	50

VEGETABLES

	1st	2nd	3rd
1. Best collection, not less than 10 entries	$5 00	$3 00	$2 00
2. Best 6 Blood Turnip Beets	1 00	75	50
3. Best 3 White Turnips	1 00	75	50
4. Best 3 Yellow Turnips	1 00	75	50
5. Best 3 Rutabagas	1 00	75	50
6. Best 6 Chantenay Carrots	1 00	75	50
7. Best 6 Short-Horn Carrots	1 00	75	50
8. Best 6 Salsify	1 00	75	50
9. Best 3 Winter Cabbage	1 00	75	50
10. Best 3 Red Cabbage	1 00	75	50
11. Best 6 Chicory	1 00	75	50
12. Best 6 Ears Pop Corn	1 00	75	50
13. Best 6 Red Onions	1 00	75	50
14. Best 6 Yellow Danvers Onions	1 00	75	50
15. Best 6 White Onions	1 00	75	50
16. Best 6 Onions, Large Type	1 00	75	50
17. Best 6 Winter Radishes	1 00	75	50
18. Best 6 Parsnips	1 00	75	50
19. Best 6 Peppers	1 00	75	50
20. Best Hubbard Squash	1 00	75	50
21. Best 6 Heads Celery	1 00	75	50
22. Best 3 Chinese Cabbage	1 00	75	50
23. Sweepstakes awarded pro rata	20 00		

CRANBERRIES.

Premiums will be awarded for exhibits of Cranberries as follows: Premium list by the Cranberry Growers' Association.

	1st	2nd	3rd
1. Bennett Jumbo	$2 00	$1 00	$0 50
2. Searls Jumbo	2 00	1 00	50
3. Bell and Bugle	2 00	1 00	50
4. McFarlin	2 00	1 00	50
5. Metallic Bell	2 00	1 00	50
6. Bell and Cherry	2 00	1 00	50
7. Prolific	2 00	1 00	50

One pint is sufficient for an entry. Send all entries to Frederic Cranefield, Secretary, Madison, Wis., charges prepaid.

to the cellar or other forcing place and beeded on 2 or 3 inches of loose soil on the floor. The clumps should be placed close together, the spaces between the clumps filled with loose soil, and the crowns covered to the depth of about an inch. The soil should be moistened thoroughly and kept moist all the time, but never allowed to become drenched. For white shoots the light should be excluded. When forced in the greenhouse the space under the benches is utilized, and the light can be excluded by boarding up the sides or hanging old carpets, burlap, or canvas over the openings.

THE TEMPERATURE NEEDED

For the first 10 days after the crowns are placed for forcing the temperature should be kept rather low, 45 to 50° F. After this period a temperature of 55 to 60° F. is most satisfactory, although a higher temperature will not be injurious. A temperature as high as 75 to 80° F. produces a rapid, soft growth, while a low temperature produces a slow growth, but gives shoots of good quality.

In about six weeks after bedding, the cutting can begin and will continue until the crowns are exhausted. As soon as the crowns become exhausted they should be removed and a new supply put in. With a little care in timing the bedding of the crowns, a continuous supply can be had all winter.

America can ship 50 per cent more food this year if we are all 50 per cent better Americans.

"And the Half Has Not Been Told."

Editor Wisconsin Horticulture:—Having been born across the sea, where militarism is fed to one in the public school as is his religion, I am naturally appreciative of my adopted land America, more so, perhaps, than a native son who has not had a chance to compare the two methods of producing a citizen. I have from the very inception of the war been intensely pro-ally, believing that the Kaiser would have to be brought to his knees and beg for mercy before there would be a world fit to live in. I remember very well, therefore, your very patriotic number of Wisconsin Horticulture, published at the time our country decided to oppose the Teutonic-Satanic forces for world domination-damnation,; and, as I looked through its pages then, I felt like sending you a message something like this:

"Good boy! By your wonderful patriotic touch to Wisconsin Horticulture, you are lining up all loyal horticulturists and bringing the war into the gardens and orchards, where we are already fighting the devil in many forms, i. e., weeds, insects and plant diseases. Compared with life in the trenches and in the devastated places of Belgium and France, life in our gardens and orchards is like life in a real Paradise, but your splendid patriotic number will assist in bringing home to every gardener and orchardist the terrible truth that behind every tree and underneath every bush, green and fresh and beautiful as it may be, there lurks the hideous spirit of this monster he-devil, the Kaiser, who, like the serpent in that first beautiful garden, has stung all civilization with his bloody sword.

"To arms, orchardists: Get out your spike-toothed harrows and your deep-pronged cultivators and other implements, and eradicate, and exterminate the weeds sown by pro-germanism and thus purify the soil of our beloved land, for just as the weeds choke and kill the plants that give life and nourishment to us, so the principles of that Satanic cuss, the Kaiser, have stunted and stifled all the godly virtues that ever swayed the human soul.

"Then get out your sprayers and with the most vitriolic solutions permeate and saturate the air, to control he Germanic pimples on our social body. Paris may have her **parasites** and Ireland her **microbes**, but the most devilish germ that ever man was called upon to combat is this German germ, originated and propagated by his Satanic majesty, better known as Bill Zeelzebub, the bellicose barbarian. 'BACK ON YOUR BELLY TO BERLIN, BILL,' should be the war-cry of every liberty-loving, true-blue American orchardist."

And if I must wind up this patriotic ebullition with the very latest conundrum, which I believe every orchardist who hates the Beast, will enjoy:

If the devil and the Kaiser should live in the same tree, what kind of fruit would that tree produce?

Yours very sincerely,
John Boler.

(Solutions solicited—Editor.)

After the war Europe will continue to look to America for help; there will be no crops raised over-night.

RULES OF ENTRY.

1. Exhibits must be arranged ready for judges by 1:00 P. M. Tuesday, January 8th. This will be strictly enforced.
2. Four apples constitute a plate, no more, no less.
3. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary* W. S. H. S. Madison, Wisconsin.

HARDY OLD FASHIONED PLANTS
OUR SPECIALTY
The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices
WILLIAM TOOLE & SON
Hardy Plant and Pansy Farm **Baraboo, Wis.**

"Ship for Ship; Town for Town."

"Ship for ship, town for town, man for man!"

"That must be the law," says the London Daily Mail, "and the Hun must be told plainly that this is our fixed determination. Ship for ship, every German submarine and every German merchantman must be surrendered as one of the conditions of peace. Town for town, a German town must make good each French or Belgian town destroyed or itself be expropriated and be seized and held as Belgian or French property. Man for man, for each British soldier who suffers hunger a German officer should be placed on short rations, as Macterlinck once suggested, identical with the rations supplied to our men in Germany; and if a British soldier is ill-treated or mnrdered, a German officer should be shot. These are methods the Hun would understand."

Hold Fast.

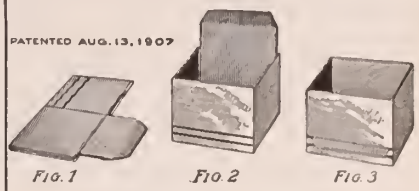
Those splendid fighters, the U. S. Marines, have a slogan,—"What we take we hold." All America may well adopt another,—"What we start we finish." We are in the strnggle to subdue the Beast of the world, the imperial government of Germany backed by the German people, and we propose to finish the job in spite of all hypocritical pleas for peace by negotiation. It is given to but few to express our high purpose in fitting words, but these words of our great Commander-in-Chief voice the spirit of every true American. Read them again and again:

"The past and the present are in deadly grapple and the peoples of the world are being done to death between them."

"There can be but one issue. The settlement must be final. There can be no compromise. No half-way decision would be tolerable. No half-way decision is conceivable."

"What we seek is the reign of law, based upon the consent of the governed and sustained by the organized opinion of mankind."

"The blinded rulers of Prussia have roused forces they knew little of—forces which, once roused, can never be crushed to earth again, for they have at their heart an inspiration and a purpose which are deathless and of the very stuff of triumph."—From President Wilson's Address, Mount Vernon, July 4th, 1918.



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Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

Quality Stock

Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
62nd Year

Kellogg's Nurseries
Box 77, Janesville, Wis.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
Lake City, Minnesota

McKAY NURSERY COMPANY
MADISON, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

War Garden Work for November

There remains only cleaning up the garden and plowing or spading. Garden authorities differ in giving advice about fall cultivation so the amateur may choose his own plan. It probably depends largely on the nature of the soil and the exposure. With soils light in texture and well drained little is to be gained by fall plowing. These gardens may be worked early in the spring.

In the case of heavy soils much is to be gained by fall plowing, or spading. Plow such soils in the fall but do not level by raking or harrowing, as the rough surface tends to hold rain and snow so that the subsoil will be well saturated. The surface may be leveled as needed in the spring and long delays in getting in the seeds of early vegetables.

The question of fertilizers is still a vexing one for the war gardener with no satisfactory soluton in sight. Where stable manure can be had it should be secured at any reasonable cost and either applied to the garden and plowed under this fall or piled ready for next spring. In the latter case cover with boards or other means to avoid leaching.

Sauerkraut Approved as Patriotic.

Sauerkraut is a valuable food and adds to the variety of ways in which cabbage may be prepared.

The Food Administration regards the free use of sauerkraut as a means for saving greater amounts of staple foods needed abroad. Sauerkraut is a patriotic dish in spite of its name and its use should not be curtailed.

Destroy by Fire

Whenever possible burn all refuse from the garden. In this way we destroy insects and disease. Composting plants and weeds taken from the garden is a pretty theory but often a very expensive one.

Plant a few daffodils, tulips and hyacinths in pots for spring blooms.

A cold frame is a good place in which to store root crops, cabbage, and celery temporarily.

Take up a few plants of parsley for winter use. It will grow quite readily in the kitchen window.

Let the canna and dahlia bulbs lie on the ground a few hours before putting them in the cellar.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONS N STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, December, 1918 | Number 4

While this beautiful example of border planting can scarcely be duplicated on home grounds, the plan and the plants may be studied to advantage.

Horticulture, Its Place Among the Occupations of Men.

(Lecture notes prepared by the late E. G. Goff, in 1889. See November Wisconsin Horticulture)

We will next consider the place that horticulture occupies among the occupations of men. We have already said that the scope of horticulture includes the culture of fruits, vegetables, and ornamental plants. This implies the production of certain articles needed or desired by man, and we see first that horticulture is

(a.) A productive industry.

I use the term productive in the sense of furnishing what we call raw materials, as distinguished from manufactured articles. These raw materials are furnished to commerce from various sources. They may come from the surface of the earth where they have been produced by nature, unaided by man, as in our primeval forests. The lumbering business is then one of our productive industries. They may come from the surface of the earth, where they have been produced by nature, aided by man's protection and care, as in our agriculture. They may come from beneath the earth, where they have been deposited in past ages, as in our mining industries, or they may come from the water, where they are produced by nature, either with or without man's assistance, as in our fisheries.

In this, perhaps somewhat arbitrary classification, we readily discover that horticulture is

(b.) A branch of agriculture.

We may next consider some of the relations of horticulture to the other branches of agriculture, and in order to do this, we will first consider what these branches are. Agriculture may be divided into four general divisions, viz.: Cereal production, or the growing of grain; animal production, or the rearing of animals; hoed crops, or the growing of corn, cotton, tobacco; horticulture, or the growing of fruits, vegetables and ornamental plants.

If we were to ask which of these branches of agriculture is most highly developed, it is probable that the honor would fall upon horticulture. In no other department do we find the products of the soil so much enhanced by labor and intelligence as in horticulture. Skillful market gardeners usually take two, often three and even four crops from the same ground each year. In all our large cities may be seen commercial green houses, comprising but a few hundred square feet of glass, and located on one or two city lots that yield larger incomes than the average prairie farm. In the suburbs of New York, fifty and even one hundred dollars per acre are often paid for the rent of land devoted to market gardening, and Mr. Henderson states that he finds it profitable to employ on the average one man the year round to each acre of land devoted to gardening. Surely no other department of agriculture can show so much concentration of labor and capital.

Again, in no other department of agriculture are the products of nature so much differentiated, that is, changed by art. To verify this fact it is only necessary to study the processes of propagation in one of our large nurseries. We shall there find that almost every plant offered for sale is in a sense the product of art. The long rows of apple trees offered for sale are none of them growing on their own roots, but all have been either grafted or budded. Most of the varieties grown could not possibly be perpetuated under the purely natural methods of propagation, and many of them would never have been secured at all but by the aid of art. In the vicinity of large cities we may find the operations of gardening going on under glass during the entire winter, from which the markets are supplied with fresh vegetables while a frigid temperature prevails in all the external atmosphere.

As we shall see in our next chapter, there are reasons for believing that horticulture is also the oldest branch of horticulture.

Discussion of the Spray-Gun.

To meet the growing popularity of the dry-dust method of applying insecticides and fungicides, the manufacturers of liquid spraying machinery have designed the spray-gun. The spray-gun is a light, compact rod about two feet long, and so constructed that it will throw a large volume of spray material at high pressure. By opening the gun to its full capacity a straight stream capable of being thrown a considerable distance is produced; by shutting it down a cone-shaped spray is made. Different sized disks are supplied with each gun in order that the amount of material applied may coincide with the capacity of the spray pump. The ease and rapidity with which the dust can be applied makes it possible for growers having a large acreage to cover the trees in the few days in which certain insects may successfully be controlled. The spray-gun is intended to answer

the same purpose in applying a liquid spray that the duster does in putting on the dry material. Many growers have bought spray-guns in the last two years thinking that by so doing they could get along with less help and still do as much spraying.

We purchased two guns of a well-known make for use in the orchards this season. We have about 60 acres of 11-year-old apples and pears to spray. There are two sprayers on the farm, and we planned to use one gun for each machine, thereby saving the time of two men.

The spray-guns were first tried out on a block of 11 acres. It looked at that time as though a considerable amount of material was being wasted, more so than with a regular spray-rod, due to the larger volume of material being applied. On the next block sprayed a comparison was made of the amounts required per tree with the regular rod of two nozzles each, and with the gun. This block consisted of mixed varieties and was divided as nearly as possible into halves, each half containing over 300 trees. For the dormant spray the amount of spray liquid required per tree for the spray-gun was 1.5 gallons and for the rod one gallon. For the pink bud stage 1.9 gallons per tree were required for the gun and 1.4 gallons per tree for the rod. These were the averages for over 300 trees. Both of these sprayings show a larger amount of material used by the gun than the rod, an item of considerable moment when several thousand trees are to be sprayed.

While it took more material early in the season with the gun than with the rod our later sprayings showed just the reverse. The trees were then in full foliage, which kept the spray from being blown away. The average amount per tree for the next two sprayings was two gallons per tree with the rod and 1.6 gallons per tree with the gun. While less material was used, which would seem to be an advantage, we could not do as good a job with the gun as with the rod. When using the spray-gun it is impossible to spray against the wind, while with the ordinary spray-rod a good job can often be done against the wind if it is not blowing too hard. With angle nozzles on a spray-rod the tree can be covered in a thorough manner; the fruits must be hit from all sides. Unblemished apples cannot be produced where curculio are abundant unless completely covered with spray on all sides. If one side of the apple is not covered this exposed side is liable to be stung. Our difficulty seemed to be to hit the underside of the apple, and we found it could not be done with the gun. With the angle nozzles it is possible to shoot up into the tree from underneath, thus making it easy to hit the apples on the under side.

After giving our guns a thorough trying out, we laid them aside in favor of the slower but more thorough rods. Some thinning has been done in the block where our test of the rod versus the gun was made, and we have found a larger proportion of curculio-stung fruits where the spray-gun was used.—H. B. H. in Rural New Yorker.

Squash and pumpkins must be kept warm and dry if they are to be stored until late in the winter.

The Orchard Fertilization Question Summarized

A most confusing situation, both for the orchardist and for the fertilizer man, is found in the conflicting fertility recommendations made by the various Experiment Stations.

A number of states have unhesitatingly recommended the use of the fertilizer in the orchard, others have hedged, and one or two still maintain (though with waning ardor) that fertilizer is not needed in orchard management.

In view of the above, Mr. Frank H. Ballou's article in the Country Gentleman under date of September 21st, summarizing a number of orchard fertility practices, is especially welcome and valuable. The article while dealing mainly with the relative merits of clean cultivation versus sod orchards throws much direct light upon the possible causes for variations in fertilizer recommendations emanating from different experiment stations.

Mr. Ballou's summary is as follows:

Consider, therefore the result of orchard culture and fertilization experiments on rugged land well and widely represented by that of Southern Ohio, the following propositions are justified by work both finished and in progress:

1. That on orchard areas abounding generously in organic or nitrogenous matter both the tillage-cover-crop and the grass mulch methods— where each plan is faithfully and conscientiously employed—will produce excellent results without manure or commercial plant food.

2. That where the soil, although

(Continued on page 45)

Wisconsin Horticulture

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Convention Next Month

Owing to unusual conditions, the program is far from complete. It has been very difficult to get replies to letters, due to the strain of the last few weeks of the war, its unexpected termination and to the plague of influenza. The secretary, however, can assure members that the program will be full to overflowing and better, if possible, than last year. There may be some changes but there will surely be many additions to the program as here printed. A new feature is the Garden Conference Thursday forenoon which will be attended by delegates from all the

PROGRAM

Annual Convention, State Horticultural Society, State Capitol, Madison, Wisconsin, Wednesday, Thursday, and Friday, January 8th, 9th, and 10th, 1919

Capital Hotel Headquarters for Officers and Delegates

Wednesday Afternoon, 2 O'clock

Opening Address—Hon. Merlin Hull, Secretary of State.
Introduction of Delegates from Minnesota, Iowa, Illinois, Indiana, and Northern Illinois Societies.

MARKET GARDENING

1. Do We Need More Young Men in Commercial Gardening? How Shall They Begin? Answered by Irving Smith.
2. Five Acres of Vegetables and Five Acres of Fruit—J. W. Roe.
3. Tomatoes For Market: Varieties and Culture—J. F. Hauser.
4. Pruning and Spraying Small Fruits—T. H. Kiethley.
5. Market Gardening—F. H. Gibbs, President Minnesota Vegetable Growers Ass'n.
6. Strawberry Round Table—Informal talks by members on successes and failures.

Wednesday Evening, 8 O'clock

Country planning as affected by the war, Prof. F. A. Aust.

Thursday Forenoon, 9:30 O'clock

VICTORY GARDENS

(Formerly War Gardens)

1. Liberty Gardens in Minnesota in 1918 and Plans for Victory Gardens 1919—Prof. R. S. Mackintosh, Minnesota.
2. Organizing a City for Garden Work—Prof. J. G. Moore.
3. Propagation and Distribution of Plants—H. C. Christensen.
4. Garden Pests and Their Control—Prof. L. G. Gentner.
5. Gardens in Small Cities—W. R. Abbott.

Discussions of Community Gardening by Delegates to Garden Conference.

Thursday Afternoon, 2:30 P. M.

1. Indiana Apple Orchards—F. J. Heacock, President Indiana Horticultural Society.

larger cities of the state and many smaller ones. While the primary thought is to aid in the continuance of the splendid garden work carried on in the cities in 1917 and 1918, the papers and discussions will be of a nature to interest every one. So come prepared for the best and you surely will not be disappointed. Don't forget to tell your friends that everybody is welcome, even those, who for reasons beyond our understanding, are not yet members.

Peace With Victory.

An armistice has been declared: peace will soon prevail. That being the case Wisconsin Horticulture may now resume its former peaceful attitude. We have fought and licked the Hun and now we have only rabbits, bugs and such like to fight.

Had the editor not known his readers he would have offered an apology for using space designed for the discussion of horticulture for war talk, but he always knew no apology was necessary.

There has been about the regular number of lapses in memberships, rather more than usual perhaps from the eastern and southeastern part of the state and only three peremptory requests to stop the paper, one of them from Milwaukee, since the November issue was mailed.

Kindly comments and encouraging words have come from many sources.

Now that peace will soon prevail the editor joins you in heartfelt rejoicing. The dead have not died in vain. Our boys who are over there are coming back and no soldiers ever returned from battle with greener laurels nor brighter shields. We know now what perhaps a few doubted, that America is safe, safe from demagogues and internal strife and we know also that the world is safe and we know that so long as the Stars and Stripes shall float right shall be proclaimed as might and the "reign of law, based upon the consent of the governed and sustained by the organized opinion of mankind" shall forever prevail.

Cut and burn the tops of all perennial plants. This will get rid of some of the borers and other insects that are apt to prey upon them.

2. Hardy Fruits—Prof. N. E. Hansen, Brookings, S. D.
3. The Women's Auxiliary—Mrs. N. A. Rasmussen.
4. Women in Agriculture—Mrs. W. A. Toole.
5. Domesticating Our Native Wild Flowers—Wm. Toole, Sr.
6. Practical Rose Growing for the Amateur—Frederic W. Sparks.

Thursday Evening

Program to be announced later.

Friday Forenoon, 9:00 A. M.

Business Meeting 9 O'clock to 10 O'clock. President's Address, Report of Secretary, Trial Orchard Committee, Delegates to Other Conventions and Election of Officers.

1. Beekeeping In Its Relation to Horticulture—N. E. France, Pres. State Beekeepers Ass'n.
2. Drug Plants—Prof. E. Kremers, University of Wisconsin.
3. Progressive Strawberries at One Thousand Dollars an Acre—W. R. Williams.
4. Insect Review for 1918 and What to Expect in 1919—Prof H. F. Wilson.
5. The Plant Disease Situation in the State—Prof. R. E. Vaughn.

Friday Afternoon 2:00 O'clock

1. Fruit Growing in Iowa—Prof. S. A. Beach, Ames, Iowa.
2. Pruning—Prof. R. H. Roberts.
3. How the Horticulturists Can Help in the Grain Rust ampaign—Dr. S. B. Fracker.

Well Paired

Last month Mr. Boler offered the following purely horticultural, pertinent and timely conundrum: If the devil and William Hohenzollern lived in the same tree, what kind of fruit would that tree produce? Although the editor solicited solutions there were no takers. The answer is—a rotten pair (pear).

Now laugh if you feel like it, but personally I consider it a gratuitous insult to the Devil.—F. G.

Do not let dahlia or canna roots dry enough to shrivel.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Among several letters recently received, we quote the following from a professional gentleman residing about one hundred miles distant.

"Mrs. S. N. Whittlesey,
Cranmoor, Wis.,

Dear Madam: We agree with you that cranberries can be used in various appetizing ways as per your department in Wisconsin Horticulture. The difficulty here is in getting good cranberries. Could you ship me, say a half bushel and what would be the price of good berries?"

* * * Every season we receive a number of such inquiries from different sections and states, with the same statement, that good berries cannot be procured in home stores. There is no excuse for such a regrettable condition in any market, and we wish lovers of cranberries would insist on their wants being properly supplied. When people desire, and are willing to pay for good fruit, there is no reason why a merchant should hesitate to invest in the best grades grown. The better the berry, the finer the flavor, and are really the most economical to use.

"One thing that keeps many people from using cranberries freely, is that it is supposed they take too much sugar to make them palatable. That is a common mistake, and ought to be corrected. There are many ways of preparing cranberries without using so much sugar." Note the recipes given in November issue of this magazine.

With the four pound allotment of sugar per capita through December and an unlimited quantity after January first, no one need fear to satisfy their taste because of sugar restrictions, even those who cling to the old notion that cranberries are sugar consumers.

"Cranberries can be used for a greater variety of purposes than any other fruit except apples. The sauce gives just the right relish for poultry, game, and beef and is good to serve with other meats. It is a delicious relish whether the meat be fresh or corned, roasted, boiled or broiled.

"Cranberries cooked with pot roast and the cheaper cuts of boiled meats make the meat exceedingly tender and delicious. To prepare a 3 pound roast, brown the meat in 3 tablespoons of hot fat; when the surface is brown remove the meat from the pan and add 3 cups of water; stir until boiling; add 2 cups of cranberries; replace the meat in the pan with the gravy and cranberries and proceed to cook in the ordinary way, adding flour to thicken, also salt and pepper to taste, when cooking is about half finished.

"Cranberries are so moderate in price, require so little labor to prepare and cook, and can be used in so many ways, that this distinctive American fruit supplies the means to provide attractive, delicous dishes from inexpensive ingredients. Note well these points —no waste, no cores, no peeling, no seeding, easy to prepare, keep well, always acceptable, wholesome, taste good and look well."

Try a pie made of 1 cup of chopped cranberries, 1 cup of sugar and 1 cup of cream, baked between two crusts.

Don't forget that one peck of cranberries and two and one-half pounds of sugar will make ten glasses of delicious jelly. See recipe in November Horticulture.

The cranberries harvested in September, cleaned and packed in October are all shipped out and sold, from most of the sections of the state; the last car leaving Cranmoor, November 20th.

The fruit buds are set for next year's crop and by the time these notes are published all the marshes where water is available, and all should have—will be covered with a deep flood, with the vines at rest till next spring. The important work for winter months is the sanding of bogs and dams which can be done much better and cheaper with sleds than wagons.

The Chicago office of the American Cranberry Exchange is rushed with work at this writing (November). Help has been sent down from Grand Rapids, Wis., and another call requisitioned the services of Mr. C. R. Treat of Wyeville.

Candied Cranberries

Cranberries, 1 cup
Sirup, ½ cup

Choose large red cranberries and prick each one three or four times. Drop them carefully into the boiling sirup and allow them to cook slowly for 5 or 6 minutes. Remove from fire and allow to stand overnight. Reheat and allow them to stand another night, if possible. Then while hot, remove the berries from the sirup and drop on well oiled paper or plate to dry. These may be used in the place of candied cherries for decorations.—U. S. Food Administration.

War Gardeners to Plant Fruit Trees.

Many important suggestions were presented at the last meeting of the War Garden Captains and Lieutenants, held at City Hall last Wednesday evening at the call of Chairman H. A. Foeller.

One suggestion presented by Dady Oliver, our champion "weed foe," called for a resolution that the Council of Defense be petitioned to urge the general and generous planting of fruit trees throughout the country, and most especially in our county and city; that steps be taken to plant in Green Bay no less than 5,000 apple trees by next spring. In his plea Dady condemned in the strongest terms the planting of such trees as box elders and other quite as useless trees that rob the soil of nourishment and scatter seeds by the millions that never fail to sprout and infest gardens and fields like weeds. He also showed his contempt for the citizen who refuses to plant fruit trees or perhaps cuts down existing fruit trees because the "boys" rob the fruit. He wonders where you and I and the other old "boys" would have gotten our apples in our youth if our fathers' actions and thoughts had been as selfish and ungenerous. By the way, the Olivers have several trees with nice apples on them, some hanging right over the fence,—Dady claims that the boys don't bother to steal them at all.

A general discussion brought out many points in favor of the fruit tree suggestion. With some 5,000 additional apple trees planted in this city of the suitable varieties for this climate and soil, there would be no need in five or six years from now to pay 5 to 10 cents a pound for apples in the winter time. Everyone would have plenty of apples to eat. Boys could pilfer apples to their hearts' content and no one would miss them. Suppose all our box elders and maples along the streets were hickory trees or butternuts, what need of being chased by the bull or irate farmer when you go out five to ten miles in the country stealing nuts in the pasture lots. Two rows of tall stately hickory trees along the cement highway from Green Bay to De Pere would form a beautiful "Hickory Lane" some twenty-five years from now, with plenty of nuts for all the kids and some to spare for the grownups. Wouldn't that be far better than those dry sticks now lining this road? Fruit trees not only give shade equal to box elders and maples, etc., but in addition such trees as apple, plum, and cherry, give us beautiful spring blossoms, and in summer and fall delicious fruit. It was the opinion of all Captains and Lieutenants assembled that hereafter, to provide for a future supply of good fruit as well as beauty, to urge everyone to plant suitable fruit trees wherever practical in front yards, along all city streets between sidewalk and curbs, and along all country roads. The one reason for urging planting of fruit trees in such places is the fact that street and road sides and front yards are better adapted for trees, while back yards and gardens, to produce a maximum vegetable crop, should be as much free as possible from trees that rob the soil of nourishment and keep out the essential sunlight.

Another resolution was passed to ask our City Council to purchase one or more good sized power spray rigs and make the spraying of shade and fruit trees a municipal responsibility. An expensive planting of fruit trees would make this a necessity. Only systematic and thorough spraying would assure the destruction of the insect pests threatening the life of fruit and shade trees. For the average citizen, who owns a home, it is not an economical proposition to purchase a spraying outfit for his few trees, anymore than it would be economy for each to install his own independent waterworks or sewage system.

A general complaint was voiced against the pilfering and wanton destruction of gardens by boys, and the positive indifference of the police to cope with the situation. What could be more discouraging to the poor men and women, who, after working hard at their daily task, put in extra hours at back breaking labor of planting, hoeing, and weeding, spend some of their honest earnings for costly seed, than to find malicious or thoughtless boys stealing and destroying the anticipated harvest? The devastation by dogs running around loose also again came in for its share of condemnation. In fact so many discouraging ailments of the "Garden Constitution," that a suggestion of a War Garden exhibit at this time with awards of prizes and premiums, found little or no support. Thieves, vandals, indifferent police, dogs, dry weather, weeds, insects, poor soil, etc., are all parasites sapping the vitality of the earlier enthusiasm.

However, we are not going to lie down; we will keep on backing our boys "Over There" by early preparation for a much better and bigger crop in next and following seasons. Captains are instructed to notify all War Gardeners that

those who diligently tilled their gardens and desire their present lots for next year may have them again, and, if so desired, may fertilize them this fall or in spring, with the assurance of a continuous tendency as long as the properties are available for such purpose and as long as the gardeners show their good faith by properly planting and cultivating. Captains will have charge of the plowing this fall and next spring, directing said plowing in a way to assure proper drainage and bounding of lots, which was not done last spring.

The awarding of prizes for the best war gardens has been deferred owing to the very unfavorable conditions, in especially one of the large war garden tracts. It is hoped conditions next year will be more favorable on all sites. About November 1st, will be published a report of the net value or earnings of all war gardens in the city, as near as practical, of course not including the home gardens of which Captains have no records. The re-allotment of lots will be done also by the Captains this fall, so that all confusion in the spring rush will be avoided, and work started earlier. Additional information on gardening, seed, adequate police, thief, and dog protection will be disseminated from time to time during this winter. No efforts of the Council of Defense will be spared to make the War Gardening an ever increasing success. All together now, plant fruit trees.

Report of meeting Sept. 4, 1918, City Hall, Green Bay, Wis.

War Garden Committee,
Per H. A. Foeller, Chm.

PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Jan. 8, 9, 10, 1919.

	1st	2nd	3rd	4th
1. Best collection of apples, not less than 15 varieties	$10 00	$6 00	$4 00	$2 00
2. Best 5 plates (5 varieties) commercial apples for Wisconsin	5 00	3 00	2 00	1 00
3. Best Plate Ben Davis	1 00	75	50	25
4. Best Plate Dudley	1 00	75	50	25
5. Best Plate Fameuse	1 00	75	50	25
6. Best Plate Gano	1 00	75	50	25
7. Best Plate Gem	1 00	75	50	25
8. Best Plate Gideon	1 00	75	50	25
9. Best Plate Golden Russett	1 00	75	50	25
10. Best Plate Grimes Golden	1 00	75	50	25
11. Best Plate Jonathan	1 00	75	50	25
12. Best Plate King	1 00	75	50	25
13. Best Plate Maiden Blush	1 00	75	50	25
14. Best Plate Malinda	1 00	75	50	25
15. Best Plate McIntosh	1 00	75	50	25
16. Best Plate McMahan	1 00	75	50	25
17. Best Plate Newell	1 00	75	50	25
18. Best Plate Northern Spy	1 00	75	50	25
19. Best Plate Northwestern Greening	1 00	75	50	25
20. Best Plate Patten	1 00	75	50	25
21. Best Plate Pewaukee	1 00	75	50	25
22. Best Plate Plumb Cider	1 00	75	50	25
23. Best Plate Salome	1 00	75	50	25
24. Best Plate Seek-no-further	1 00	75	50	25
25. Best Plate Scott Winter	1 00	75	50	25
26. Best Plate Tolman	1 00	75	50	25
27. Best Plate Twenty Ounce	1 00	75	50	25
28. Best Plate Utter	1 00	75	50	25
29. Best Plate Wagener	1 00	75	50	25
30. Best Plate Wealthy	1 00	75	50	25
31. Best Plate Windsor	1 00	75	50	25
32. Best Plate Wolf River	1 00	75	50	25
33. Best Plate York Imperial	1 00	75	50	25
34. Best tray of each of the above named varieties	3 00	2 00	1 00	75
35. Best 5 trays of any of the following varieties: McIntosh, Northwestern, Wealthy, Tolman, Wolf River, Fameuse, Gano, Salome, McMahan, Seek-no-further, Windsor	10 00	6 00	4 00	2 00

Separate samples must be furnished for each entry

36. Best exhibit Pears	1 00	75	50
37. Best exhibit Crabs	1 00	75	50

VEGETABLES

	1st	2nd	3rd
1. Best collection, not less than 10 entries	$5 00	$3 00	$2 00
2. Best 6 Blood Turnip Beets	1 00	75	50
3. Best 3 White Turnips	1 00	75	50
4. Best 3 Yellow Turnips	1 00	75	50
5. Best 3 Rutabagas	1 00	75	50
6. Best 6 Chantenay Carrots	1 00	75	50
7. Best 6 Short-Horn Carrots	1 00	75	50
9. Best 3 Winter Cabbage	1 00	75	50
10. Best 3 Red Cabbage	1 00	75	50
11. Best 6 Chicory	1 00	75	50
12. Best 6 Ears Pop Corn	1 00	75	50
13. Best 6 Red Onions	1 00	75	50
14. Best 6 Yellow Danvers Onions	1 00	75	50
15. Best 6 White Onions	1 00	75	50
16. Best 6 Onions, Large Type	1 00	75	50
17. Best 6 Winter Radishes	1 00	75	50
18. Best 6 Parsnips	1 00	75	50
19. Best 6 Peppers	1 00	75	50
20. Best Hubbard Squash	1 00	75	50
21. Best 6 Heads Celery	1 00	75	50
22. Best 3 Chinese Cabbage	1 00	75	50
23. Sweepstakes awarded pro rata	20 00		

CRANBERRIES.

Premiums will be awarded for exhibits of Cranberries as follows: Premium list by the Cranberry Growers' Association.

	1st	2nd	3rd
1. Bennett Jumbo	$2 00	$1 00	$0 50
2. Searls Jumbo	2 00	1 00	50
3. Bell and Bugle	2 00	1 00	50
4. McFarlin	2 00	1 00	50
5. Metallic Bell	2 00	1 00	50
6. Bell and Cherry	2 00	1 00	50
7. Prolific	2 00	1 00	50

One pint is sufficient for an entry. Send all entries to Frederic Cranefield, Secretary, Madison, Wis., charges prepaid.

Notice

There will be a meeting of the Women's Auxiliary in connection with the Annual Convention. All members of the Auxiliary should attend and induce other women to attend.

Mrs. E. L. Roloff,
President.

Notice

Members who expect to attend the convention ought to reserve hotel accommodations in advance as Madison hotels are apt to be crowded. The Capital Hotel will take care of you if you will write to them.

ORCHARD FERTILIZATION

(Continued from page 39)

not really poor, is somewhat deficient in organic matter, tillage with cover crops, for a time at least, without fertilization, will give better results in growth and vigor of trees and a larger yield of fruit than will the grass mulch method without fertilization, because of shortage of nitrogen under these conditions.

3. That the grass-mulch method, carefully followed, plus fertilization with nitrogenous plant food, will promote a great degree of growth, vigor and fruitfulness of trees on lands somewhat deficient in organic matter as will tillage and cover cropping without fertilization, with the advantage that the grass-mulch plan will permit no further loss of soil or fertility by erosion.

4. That the grass-mulch method, plus fertilization with nitrogenous plant food, not only will produce as satisfactory results in vigorous growth of trees and yield of fruit on thin, poor, steep, unsafely tillable land as will the tillage-cover-crop method on safely tillable land of equally thin, poor soil conditions, without fertilization, but is the only scheme of orchard culture that economically can be applied to the more rugged types of land.

5. That the cost of effective fertilization with quickly available nitrogenous plant food for apple orchards on rugged land, even at the present extremely high price of nitrate of soda, as compared with that set over against the cost of tillage on the more safely and readily workable areas in these generally hilly sections is no greater than, if as great as, the tillage-cover-crop method without fertilization.

Fertilizer Makes Good in Wisconsin

It is such a short time since the average western farmer looked upon fertilizer as a special form of deviltry designed to ruin his farm that the rapid spread of the fertilizer idea through the same territory seems all the more remarkable.

Not the least of the causes of this change of attitude, are the many practical demonstrations carried on here and there under the direction of level headed county agents.

We reprint below the conclusion of County Agent L. L. Oldham, of Walworth county, Wisconsin, as set forth in his "News Column" in the 14 newspapers of that county.

"The fertilizer experiments carried on in our county the past summer have proven beyond question the value of feeding the plant. Phosphorus seems to be the controlling element in most Walworth county soils. At least this is true in the growing of all our cereals. Acid phosphate or mixed fertilizers high in available phosphorous with farm manure gave excellent results and returned much more than cost in quality and quantity of produce. In those cases where available phosphate fertilizers were applied to barley, oats and wheat, the stand was more uniform, the straw was better, the heads were longer and larger, and the kernels were plumper. The increased yield per acre paid the fertilizer bill and then some. Where this element phosphorus was applied in available form to corn in connection with farm manure, maturity was hastened ten days. The corn plant showed health and vigor.

SEEDS

OLDS' Catalog
TELLS THE TRUTH
With carefully written descriptions, true illustrations and conservative statements, **Olds' 1919 Catalog** is a true guide and a most valuable book for everyone needing seeds.
OLDS' SPECIALTIES
Seed Potatoes. The new Olds' White Beauty and 10 others, choice certified stock. **Seed Corn**—Wisconsin fancy ear corn. **Seed Oats, Wheat, Barley, Clover, Alfalfa, Timothy,** Wisconsin tested, high-grade seed. **Samples FREE,** all field seeds. Buy from samples. **Garden Seeds, Flower Seeds, Bulbs, Nursery Stock, Poultry Supplies, Tools, etc.**
Write today for **Olds' 32nd Annual Catalog**
L. L. Olds Seed Co. Drawer C 61 Madison, Wis.

The fertilizer bill was paid by the increase in quality and quantity of the crop and the land is improved and made better for the next two years to come.—*Fertilizer News Bulletin.*

McKAY NURSERY COMPANY
MADISON, WISCONSIN

Nursery Stock of Quality
for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

RULES OF ENTRY.

1. Exhibits must be arranged ready for judges by 1:00 P. M. Wednesday, January 8th. This will be strictly enforced.
2. Four apples constitute a plate, no more, no less.
3. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary* W. S. H. S. Madison, Wisconsin.

HARDY OLD FASHIONED PLANTS
OUR SPECIALTY
The best varieties for Wisconsin conditions, carefully grown and carefully packed. Write for prices
WILLIAM TOOLE & SON
Hardy Plant and Pansy Farm Baraboo, Wis.

Cream City Dry Arsenate of Lead

Contains approximately 33% arsenic oxide, therefore has maximum killing power. Due to its fineness, is easily and uniformly sprayed, sticks longer to the plants and therefore gives the highest efficiency and economy.

Cream City Nitrate of Soda is a fertilizer which gives the plants an early start and supplies the necessary nitrogen.

Cream City Lime Sulphur 33° Beaume.

Manufactured by

CREAM CITY CHEMICAL WORKS

772-778 Kinnickinnic Ave. Milwaukee, Wis.

Outdoor Storage for Vegetables.

All of the popular horticultural papers give much space at this time of the year in telling how to store vegetables outdoors. These plans appear very simple and plausible but are rarely practical. The most popular is "barrel" storage. Just place a barrel on its side, fill with cabbage or other vegetables and cover the barrel with several inches (or is it feet?) of straw and earth. You may then go out from time to time during the winter and pick fresh vegetables. Maybe. It depends. Up where Brother Irving Smith lives if you get your vegetables in the barrel early enough, say September 20th, there will be snow enough so that no other covering is needed until May at least. Farther south where we have twenty below zero for a few nights it would require all the covering available in three counties to keep out frost. This spell may be followed by two weeks of thaw and so on. It depends. We hope it works and hope several of our war gardeners of inquiring turn of mind will try the barrel root-cellar this winter using, however, only such vegetables that can be readily spared.

The city gardener who has his heating plant in a cement floored basement finds the storage of vegetables a perplexing problem that no one has satisfactorily solved for him to date. Horticultural papers contain only theory. We await a real solution. The most helpful suggestion we have heard is to use boxes or barrels without bottom so that the vegetables may have the advantage of the moisture that comes through the cement. Another: cover these boxes with the winter potatoes to further hold moisture.

Quality Stock

Strawberries
Native Plum Small Fruits
Apple

WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.

62nd Year

Kellogg's Nurseries

Box 77, Janesville, Wis.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry, Raspberry and Strawberry Plants

Both Everbearing and common varieties.

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

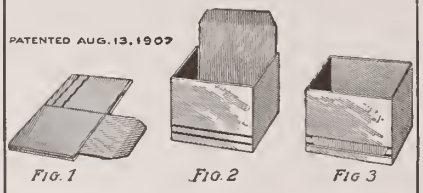
JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
Lake City, Minnesota



BERRY BOXES

Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

Exploring for Sweets

How often the man who has dined well shakes his head at the offer of dessert! That shake traces back, perhaps, to the apple sauce, cranberry jelly or sweet pickle you served with meat. This satisfied his appetite for sweets and made a dessert unnecessary.

New Trials

Follow the lead in this head shake and see where it takes you, for a war-time cook must have the imagination of an explorer. You may discover dinner combinations that satisfy in spite of "no dessert."

It is the custom in many lands to serve some sort of sweet dish with meat. There is the fruit compote of Spain, chutney of the Orient, baked bananas of the Tropics and candied yams of our own southern states. These dishes have the long approval of those who dine well. They often satisfy the sweet appetite, yet call for little or no sugar. This trail then is worth following and may lead to hidden treasures in your own orchard and garden. Here are some dishes similar to those served in foreign lands that make excellent combinations with roast or fowl.

Sweets from the Orchard

Apples cooked in cider—For a dish that needs neither sugar nor spice, try apples or pears cooked until clear in boiled sweet cider. Serve hot in large portions with meat.

Apples and Raisins—Simmer raisins in the water in which they were soaked overnight; add quartered apples and simmer together until done.

Apples and Bananas—Quarter fruit and place in a baking pan; dot each layer with butter and chopped nuts; bake in a quick oven basing frequently with a sauce made of a half cup of water, a tablespoon of white sirup and a little lemon juice.

Parsnips and salsify may be kept in sand or in a cool place without shriveling very much. It is well to cover all root crops with an inch of sand when they are stored in the cellar to prevent their drying out.

Asparagus tops should be cut and burned. A thin mulch of thoroughly rotted manure may be put over the bed, although unless this is removed early in the spring it will have a tendency to hold back the growth of the asparagus.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, January, 1919 | Number 5

The Japanese rose, rosa rugosa, is excellent for massing and equally desirable when grown singly. Unlike the common garden roses the foliage is attractive thruout the season.

A Sketch of the History of Horticulture.

(Being lecture notes prepared by the late E. S. Goff in 1889.)

The beginnings of the so-called useful arts generally, if not always, antedated the period of written history. This is necessarily true, because, as we know, the art of writing indicates a comparatively high degree of civilization, and the problems of food, clothing and shelter were of more serious importance to primitive man, than the discovery of a medium for perpetuating his thoughts. The early history of horticulture, therefore, like that of architecture, metallurgy and the manufacture of textile fabrics is of necessity to some extent a matter of conjecture. Sacred history places our first parents in a garden, and makes the first man a gardener. So far, at least, horticulture may claim the honor of being the oldest art. But other arguments may be advanced in favor of this proposition. The fruits of the earth are almost the only products that are ready for human food without some degree of preparation, and that may be secured without the exercise of some degree of skill. The grains require threshing and winnowing, if not grinding; the birds and other animals of the chase, and the fish of the waters are only taken by the employment of considerable ingenuity and skill; but the wild fruits of the forests and prairies required only to be plucked and eaten. It seems reasonable to suppose then that these would be the first products of nature that would be protected and fostered by primitive man.

The first rude savage, who thought far enough to surround the tree or shrub that yielded his favorite fruit or berry with some protective barrier, or to break down or root out other trees or shrubs that were encroaching upon this one, was, without being conscious of it, the father of the art that we are studying today under the name of horticulture. We have no conception of the particular part of the earth, nor of the exact time at which this act occurred, nor whether or not it happened simultaneously at more than one place.

So much for speculation. So far as history comes to our aid, it tends to confirm these views. The ancient writings of most, if not all the oriental countries, contain more or less frequent allusions to gardens and the cultivation of fruits and other edible plants The descriptions given of the gardens of those times are, for the most part, so much mingled with the fabulous that we can gather little authentic information from them. They serve, however, to demonstrate that the art of gardening has existed from the earliest historic ages. The fact that in the Mosaic account our first parents were placed in a garden adds weight to this conclusion. The so-called hanging gardens of Babylon, described by Pliny, the gardens of Hesperides, described by Scylax in the sixth century B. C., of Alcinöus and Laërtes described by Homer in the Odyssy may or may not have had an actual existence. Authors are not agreed on this point, but we are safe in assuming that these descriptions were not pure creations of fancy, and that gardens of considerable extent and beauty did exist in those times.

The art of cultivating the soil, according to Sir Isaac Newton, Stillingfleet and others originated in Egypt. However this may be, the ancient monuments give unmistakeable evidence that the soil in that country was cultivated at a very early period. Upon the outside of the pyramid of Cheops was found an inscription in Egyptian characters recording the various sums of money expended during the progress of the work for the radishes, onions and garlic consumed by the workmen. We know that the Israelites, during their wanderings in the wilderness sighed for the figs, vines, pomegranates, melons, onions and garlic to which they had been accustomed in Egypt. That the art of cultivating vegetables must have been in an advanced state in this country at an early time is evident from the pains taken to provide means for irrigation. According to Herodotus, the sacred groves or gardens were often of extraordinary beauty, and Strabe represents Egypt in his time, (the beginning of the Christian era) as a delicious garden, through which a traveller might proceed from one end to the other, under the shade of all kinds of fruit trees.

The frequent mention of horticultural products in the bible would indicate that the Jews paid considerable attention to gardening. Solomon says (Eccles. ii, 5, 9): "I made me gardens and paradises, and I planted in them all kinds of fruit trees. I made me pools of water to water with them the groves flourishing with trees." The remains of some of these pools are said still to exist. Solomon is said to have possessed a vineyard at Baalhaman which he let out at 1,000 pieces of silver per annum. From Jeremiah II, 21, we learn that their vines were grown from

seed, and it appears probable that the Jews knew something of the cross-fertilization of varieties, for Moses says (Deut., 22, 9) "Thou shalt not sow thy field with diverse seeds, lest the fruit of thy seed which thou has sown and the fruit of thy vineyard be defiled." Moses also gave some useful directions to his people on the culture of the vine and the olive.

In Persia, the art of gardening appears to have been early developed and to have been especially fostered by the kings. Plutarch tells us that Lysander found the younger Cyrus in his garden at Sardis, and on its being praised by the Spartan general, he avowed that he had planned and adjusted the whole himself and had planted a considerable number of the trees with his own hands. Xenophon, Diororus, Strabe and Pliny all make mention of the parks and gardens of Persia, many of which appear to have been of great extent and beauty.

The Greeks largely copied the gardening of the Persians. That fruits and culinary vegetables were in general cultivation in this country at an early period there can be no doubt. The olive, the fig, the vine and the seakale are mentioned in Solon's laws. Cabbage and asparagus are frequently mentioned among earlier Greek authors as well as several kinds of pulse and onions. Aristians, of Athens, is said to have been the first to cultivate the olive. There were at Athens, as afterward at Rome, florists, whose business it was to weave crowns and wreaths of flowers, and Theophrastus tells us that flowers and fruits were cultivated in winter, and that the violet was in profusion in the market of Athens, while snow was on the ground. Bouquets of flowers adorned the tables of the Greeks and were worn upon the person at various social meetings. Garlands of flowers were suspended from the gates of cities in times of rejoicing, and warriors ornamented their heads with them in days of triumph. Ringing and grafting were early practiced by the Greeks and branches of the wild fig were hung in or grafted upon the trees of the cultivated fig in order to promote fertilization and early maturity.

The Romans, for the most part, appear to have copied their gardening from the Greeks, as the latter did from the Persians. The first mention of a garden in Roman history is that of Tarquinius Superbus, B. C., 534. This appears to have been chiefly a flower garden. The next, in the order of time, were the magnificent gardens of Lucullus who flourished in the first century B. C., and whose extensive pleasure grounds in various parts of Italy were famous throughout that country. He is said to have introduced the cherry, the peach and apricot from the east. Nearly contemporary with these were the gardens of Sallust at Rome, that were so beautiful that when the city fell beneath the sway of her conquerors the imperial residence was fixed in them. They consisted of shady walks, porticoes and parterres of flowers interspersed with masterpieces of sculpture with seats for repose and for the enjoyment of the ever varying prospect of the city and country beyond.

Some idea of the town gardens of the Romans about the beginning of the Christian era may be obtained from the paintings rescued from the ruins of Herculaneum and Pompeii. The gardens here represented are small square plots in front of houses inclosed with trellis work, planted with espaliers and embellished with fountains, urns and other sculptured ornaments. Plants in pots and boxes sometimes appear on the walks and set in the windows and over the doors may sometimes be observed climbing plants resembling honeysuckles. The walls which surround these courts are still to be seen at Pompeii.

The orchard trees will appreciate a dressing of stable manure this winter if none has been applied for several years. Put on the ground as far out from the trees as the branches reach.

We need fewer varieties of all horticultural plants and seeds. The lists should be cut greatly and only the very best kept. Perhaps our seedsmen and nurserymen will do this some day.

Fruits supply many elements for building up the human body. Now is a good time to plan a fruit plantation and order the plants. Plant only what you can take care of well.

America's Mission

Millions in hungry lands now look to America for food.

In their misery and famine they cry to us—

We must save that we may give.

It is America's mission, our opportunity to serve.

FOOD WILL WIN THE WORLD.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Withholding names, we take the liberty of publishing some recent correspondence about cranberry lands that may furnish a little information to other seekers of knowledge along this line.

Cranberries Not For Dakota.

Dear Sir: Mr. ———, of Milbank, S. Dakota, wishes to know what his chances are for growing cranberries in that section. He says he has two pieces of very low land, always wet, light soil and sandy subsoil. We wrote him that we greatly doubted whether he could make a success of cranberries in that section on account of winter covering, but we are willing to confess that we know nothing about it and would greatly appreciate it if you would write him a letter, giving him your idea about it."

J. N. Co., Minnesota.

Dear Sir: From Secretary Cranefield of Madison, Wis., I have your inquiry as to feasibility for growing cranberries at Milbank, S. Dakota. From my knowledge of Milbank and the Dakotas generally, I should feel the undertaking a hazardous one. Not all "low, always wet lands" will grow cranberries, even though water supply may be sufficient for summer use and winter covering. Some natural conditions must exist, and food elements found both in the marsh itself and the water used—to supply nourishment to sustain vigorous life of vine, and produce fruit. I doubt if Milbank low lands furnish either. Sorry to discourage the gentleman, but if he wishes to raise cranberries would advise trying it where he might hope for a measure of success.

Mrs. S. N. Whittlesey.
Secretary.

Not Too Far North.

A client owns some 200 acres of land about half of which is natural cranberry marsh, lying along a creek which is the outlet of a couple of small lakes in our northern lake district in Vilas County. While the region is too frosty to make the cranberry marsh of any value without improvements providing- among other things, for flooding the marsh, the water suply in the lakes mentioned is believed to be sufficiently reliable to render the opportunity for an improved marsh excellent.

All this is preliminary to the statement that the owner desires to sell, having received this property from the estate of her husband, who died recently, the owner being financially unable to make the needed improvement.

C. G.

If you know of any cranberry journal I shall be grateful for the name of it and the address of the publisher.

Dear Sir: I have your letter of recent date to Sec. Cranefield relating to cranberry lands for sale in Vilas County.

Many years ago central Wisconsin was thought quite far enough north for the growing of cranberries on account of late spring and early fall frosts. Of late, quite a number of marshes are being developed north and northwest of us that are giving promise of good success, due probably to advanced methods of planting and cultivation, advantage of location and material, and by the better protection and right kind of water supply. The land you describe would seem to have the natural advantages for the making of a good marsh. It will take brain, brawn and money as well to make it successful. I do not know of any journal east or west, devoted exclusively to cranberry interests. The Wareham Courier of Wareham, Mass., gives some space to "Cranberry News." Wisconsin Horticulture also has a Cranberry Corner and I would suggest this—a good medium in which to advertise Northern lands. Our association membership reaches from the Atlantic to the Pacific coasts—nearly all are active cranberry growers, and all readers of the Horticulture.

H. J. Gebhardt, of Black River Falls, is back from an eastern trip, where among other points of interest, he visited Cape Cod and New Jersey cranberry marshes. He will tell us about it at our Jan. 14, 1919, meeting.

E. K. Tuttle and wife turned the key in their pleasant home at the Palmeter and Tuttle marsh near Mather, and removed to 1014 McLean Ave., Tomah, Wis., for the winter.

Miss Lyda M. Huyck of Minong has gone to her Chicago home for the winter.

The Home Orchard in Wisconsin.

The first part of this discussion of farm orchards by Marshall W. Sergeant appeared in the October number of Wisconsin Horticulture, p. 20. At the time the article was written Mr. Sergeant was a student in the college of agriculture. For the past year he has been hunting Huns in France and Belgium. In a letter written in France July 26th he says: "We expect you and Prof. Moore to keep up the apple crop so that we can have plently when we return, as we will want a change from hardtack and bully beef."

The installment referred to above discusses the usual neglected condition of farm orchards in Wisconsin. Proceeding Mr. Marshall says:

It is apparent that so long as such conditions exist, the home orchard will not attain the popularity it deserves, and home-grown fruit will not fulfill its mission of reducing grocery bills, promoting health, and adding to the enjoyment of rural life. As a rule, the crop harvested from uncared-for trees is small, and the fruit is small in size, scabby, wormy, and of low grade generally. The product as a whole is such that quite as many persons are dissuaded from fruit-growing as are attracted to it, and the owner of the neglected orchard often states that there are so many new "bugs" nowadays that good fruit cannot be produced in his locality, and that the trees do not yield well either. Not only is the prospective orchardist thus discouraged, and advised against entering the field, but the established orchardist is sometimes discouraged and driven out by having to fight continually against the millions of parasites being propagated by his neighbors. It is clear that the owners of badly-infested, run-down orchards are the real criminals of horticulture, and the question for us to solve is, "what shall we do with the criminal now that we have found him?"

There is probably no way in which we can effect sudden and radical changes for the better, but by employing proper methods we should be able to start a work that will gain impetus and finally result in a great improvement. This work, it seems to me, will require both legislation and education. Legislation must be provided for the man who will not do as well as he knows, and education must be given to his neighbor who doesn't know what is best to do.

The legislation we need worst is a law providing stringent regulations for the control and extermination of orchard parasites, also including fines or penalties for delinquencies, and giving to the proper authorities, executive power to condemn and destroy badly infested trees in case their owner refuses to do so. This may seem to be a rather radical proposal, but we already have more strict laws than this for the control of animal diseases, and a few pigs or cows are certainly of no greater value than a good orchard. In addition to this we must consider the fact that the loss of a pig or cow can be made good at any time, while a dead tree or a ruined orchard cannot be replaced. It must be grown again from the start, and may require ten or twenty years for the process.

In our educational work we may expect to make infinitely greater progress with the beginning and prospective fruit-raisers than with any other class. For that reason, and also because relatively little has ever been written fully covering the subject, the suggestions that I wish to offer concerning this phase of our work have to do with the very first steps of the man who contemplates planting trees. I think that we should use every oral and printed agency that we possess, or can enlist, to place before these people, information and advice to this effect:

First: If you consider the planting of a home orchard, read one or more good, up-to-date general texts on the subject, and then secure and read Bulletin 269 of the Wisconsin Experiment Station.

Second: Think over carefully what you have read; consider all the factors, both of work and of gain, involved in the care and management of an orchard; then decide definitely, either to plant the trees and give them absolutely all the care and attention they demand, or to drop the matter entirely.

Third: If the decision has been in the affirmative, calculate the number of trees that will produce all the fruit you need for family consumption; decide by consulting your Bulletin 269 what size and varieties you should have; and write to nurseries in your own states for prices on the list you choose.

Fourth: From the quotations you receive, select the most satisfactory, and order from that company, giving full specifications and also a date for delivery. Do not order too many trees, for in general the greater the number you get, the less the chance that they will receive proper care.

(Continued on page 59)

Success With Rhubarb.

For thirty-five years I have been getting a living raising small fruits from two and a half acres of land. A few years ago I adopted in my business of small fruits Rhubarb culture. I had 90 hills, and I could not supply the demand. This spring I set out 50 hills, and this fall I have set 50 more.

In growing Rhubarb my experience has been that to grow fine, large, red, and tender Rhubarb I dig my hills 30 inches across and eight or ten inches deep and fill the holes full of horse manure. Then I take a spading fork and spade six inches of the side of this hill in two hills and mix this thoroughly with the dressing. I take the soil that comes out of the hill and put this on top, and then tramp this down some in the fall. Then the dressing will have all winter to rot and will be ready for spring setting. Horse manure has lots of nitrogen, which is great for Rhubarb culture.

I grow mostly the Linnaeus. This is a very early red sort, very tender, and of good size and fine flavor. One of the best is the Strawberry, very large, late and red. I have grown some stock that weighed two pounds each. In setting the plants in the spring, I dig a hole in the center of the hill, large enough to take the plant in, and fill in around the plant some of the soil that came out of this hill and close in the soil quite hard so as to close out the air, so it will not dry out after the plants begin to grow. Then I feed the plants liquid dressing made of nitrate of soda every few days. In making this liquid dressing I take one quart of nitrate of soda and put this in 50 gallons of water, mixing well. In watering the plants I make a small hole some five or six inches deep, fill this hole full of the dressing every few days, and then the plants will soon begin to grow, and in August you will be surprised to see how the Rhubarb does grow. You will have Rhubarb to eat, can and sell to customers.

My town is a manufacturing village, with six large woolen mills and a large machine shop, which employs some five hundred men. Most of my customers are people who work in these factories and have families. All earn good pay and have plenty of money to buy with, and pay their bills weekly.

Now, the first of May Rhubarb is ready for the market. The first thing I do is to put in my front yard on a post a sign, 18 inches square, "Rhubarb For Sale, by A. A. Eastman." Everybody passing sees this sign, and I put an ad in my local newspaper, which everybody will see, and which will bring lots of trade. There is nothing like printer's ink when it is spread in the right place and in the right time. Have the best of goods, the best that can be grown. Don't try to do a little grafting work in some dirty or poor stock which will hurt your trade. Sell nothing but the best and charge a good, fair price. This year the price was 5c per pound all the season, and I could not grow it fast enough to keep my customers well supplied, and I had to buy several hundred pounds in order to keep up with my business. I find now that I am getting more ready money and much less hard work for all of my troubles in Rhubarb culture.

For winter protection, after the plants die down in the fall, I cover the plants with strawy horse dressing through the cold winter and in the spring. When the cold, freezing nights are over, I open up the center of the hills and let in the warm rays of the sun, which will warm up the plant, and you soon have Rhubarb large enough to make a fine pie. Everybody likes a good, fat Rhubarb pie early in the spring. All this will not run alone and bring in good returns. When you have put in some ambition, common sense and work and good location, you can earn big pay for all your labor and trouble, and enjoy your business, and your family and your surroundings will look like business, and your neighbors and friends will make you visits every day and do some business.—A. A. Eastman, Maine, in Market Growers Journal.

Evergreens such as small spruce and cedar are good in winter window boxes. Stick them into the soil before the ground freezes. They will hold their needles until warm days in spring.

Crop reports show nearly 60,000 acres of cabbage grown in the United States this year and over 230,000 acres of sweet corn.

Do not let ferns become dry. About once a week stand in a tub of water so as to thoroughly moisten the roots.

Apple and other trees may be pruned on warm days during the winter when it is comfortable to work outside.

Tramp the snow about trunks of trees and you will disturb the winter home of many mice.

Callas and Amaryllis.

James Livingstone, Milwaukee.

What are the best methods used ing growing calla lilies and amarylis? I have two callas that will be in bloom in a week or two but I want to know how to take care of the plant after the blooming period.

In regard to the Amarylis I bought one last spring which did not bloom, so in the latter part of this summer I placed the pot in the cellar to rest the bulb. I expect to bring the bulb into the light sometime in January. Do you think this would make it bloom?

Do you know of any magazine that is entirely devoted to the culture of flowers, both indoors and out?

The ordinary method of growing callas is to start the bulbs in August, in good, rich soil. Water them carefully at first and when they begin to grow vigorously keep them in full sunshine, give them plenty of water, and feed them quite frequently with some good liquid fertilizer. Keep them growing till May or early June and then dry them off gradually, till the foliage has all dried off. Turn the pot on its side in a dry place and let it stay there till August. Shake the bulb out and repot in fresh soil, and grow on as already advised.

The culture of amaryllis is comparatively easy. If dry bulbs are bought from a seed store they should be potted in pots according to the size of the bulb. Usually a five inch pot is big enough for the ordinary run of dry bulbs. Use good, rich, loamy soil, and water sparingly at first, that is, water enough to wet the soil completely through and then don't water again till the soil has become fairly dry. When the plant begins to grow vigorously it will need to be watered oftener, but don't let the soil get soggy. If the plant does not flower the first year, don't be discouraged; very few of the ordinary dry bulbs that are bought in seed stores flower the first year, and it is better for them not to, as it would be flowering at the expense of the bulb before it had made sufficient roots to support bulb and flower spike. Keep the plant growing till the latter part of September and then begin gradually to withhold the water, till the foliage dries completely off. Then place the pot on its side in a dry place in a temperature of 45 or 50 degrees. Let it stay there till the plant begins of its own accord to show signs of growth which may be any time from January on through February or March. If the bulb is going to flower usually the tip of the flower bud is the first to show. The plant should then be placed in a sunny window and watered thoroughly, so that the soil is completely wet through. Do not repot till you are sure it is going to flower, and then only when the pot has become too small for the plant. If the foliage begins to grow vigorously before the flower bud shows, as a rule there will be no flowers that season, although once in a while a bulb may flower at any time through the summer. If it does not flower grow it along in the way advised and if the bulb is strong enough it may flower next season.

The Garden Magazine, Doubleday, Page & Co., New York Monthly, $2.00. The Flower Grower, Madison Cooper, Calcium, New York, Monthly, $1.00.

Rabbits and Mice.

Owners of fruit trees should watch carefully from now until snow disappears for injury by rabbits and mice. This applies particularly to the home or farm orchard for weeds and grass are more apt to be plentiful in the small orchard than in the large one.

We have had much to say about rabbits in the past and while there is no reason for retracting any of it, there is no doubt that thousands of apple trees are killed in Wisconsin each year by mice.

Large trees, six to ten inches in diameter, are often girdled by mice, while the rabbit is more apt to attack the smaller trees.

Complete protection against both pests is afforded by wire screen cut in strips, folded around the trunk and fastened with wire. Less expensive is heavy building paper. Tarred paper, if set close to the ground, will repel mice as well as rabbits. Washes of any and every kind are of doubtful value.

It takes six or seven years to produce marketable ginseng. It is not a get-rich-quick crop. In fact, very few people have the right location and the patience needed to grow a crop from seed to marketable plants.

Wisconsin Horticulture

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The Decline in Small Fruit Growing.

The growing of raspberries for market in Wisconsin has declined in the past ten years until at the present time there is practically nothing left. The same is true of strawberries. This is really an alarming condition of affairs from the standpoint of the consumer. The price of berries last year was not the important thing in most markets; the factor that worried both dealer and buyer was to get the berries at any price. In many markets housekeepers were unable to buy a crate of berries at one time. The storekeeper simply couldn't sell the crate, he was obliged to take care of single box customers. This was true of strawberries as well as raspberries. In past years southern Wisconsin markets were well supplied with Illinois berries which came in just ahead of our own, but last year few were to be had. War conditions accounted for part of this but not all.

For years small farmers and truck growers who formerly grew the bulk of the berries have been cutting down their plantations largely because they were not receiving adequate returns. People wanted strawberries at ten cents a box or less and raspberries at 15 cents for a quart box was considered enough.

Owing to the shortage and advance along other lines, prices are not apt to decline for some years to come, at least not below the cost of production.

While we do not advise everybody to rush into berry growing we do believe that there are most excellent returns awaiting those who go into the business right now.

Not everybody should undertake the work, only those who have had some previous experience in growing and marketing or those who are willing to learn and who will start with the clear understanding that it requires just a little more brains and a little more skill to produce first class fruit than is required in any other line of agriculture. No one should go into berry growing with the idea of getting rich quick. The returns will be exactly in proportion to the energy and careful, painstaking effort applied to the job.

There is one class that should not under any circumstances attempt to raise and market berries, and that is the dairy or live stock farmer. Stick to your cows or beef cattle and do a good job at it and don't mess into berries as a side line. If such a farmer has a boy who can't see the fun in milking cows and who really wants to try fruit he should be given a chance, a fair chance.

It's the small farmer who is not too far from market who should plant berries. There are hundreds of such places in the southern half of the state, places of twenty to forty or even eighty acres. On places of this kind five acres of strawberries, (one acre next year if none have been grown here-to-fore) and five acres of raspberries all well grown will yield a cash income, a net profit, equal to that from any 160 acre dairy farm in the state. Market gardeners can grow berries to advantage, but intensive vegetable gardening and fruit growing don't fit very well.

The State Horticultural Society offers help to any one who wants to undertake this work. Questions relating to soils, varieties, culture, etc., will be answered free of charge. Address Secretary State Horticultural Society, Madison, Wis.

If in any community six or more interested persons will apply to the secretary a practical berry grower will be sent to confer with them and discuss the best means of getting started in the business.

You cannot afford to miss the Convention and fruit show, January 8, 9, and 10.

PROGRAM

Annual Convention, State Horticultural Society, State Capitol, Madison, Wisconsin, Wednesday, Thursday, and Friday, January 8th, 9th, and 10th, 1919

Capital Hotel Headquarters for Officers and Delegates

Wednesday Afternoon, 2 O'clock

Opening Address—Hon. Merlin Hull, Secretary of State.
Introduction of Delegates from Minnesota, Iowa, Illinois, Indiana, and Northern Illinois Societies.

MARKET GARDENING

1. Do We Need More Young Men in Commercial Gardening? How Shall They Begin? Answered by Irving Smith.
2. Five Acres of Vegetables and Five Acres of Fruit—J. W. Roe.
3. Tomatoes For Market: Varieties and Culture—J. F. Hauser.
4. Pruning and Spraying Small Fruits—T. H. Kiethley.
5. Market Gardening—F. H. Gibbs, President Minnesota Vegetable Growers Ass'n.
6. Strawberry Round Table—Informal talks by members on successes and failures.

Wednesday Evening, 8 O'clock

Country planning as affected by the war, Prof. F. A. Aust.

Thursday Forenoon, 9:30 O'clock

VICTORY GARDENS

(Formerly War Gardens)

1. Liberty Gardens in Minnesota in 1918 and Plans for Victory Gardens 1919—Prof. R. S. Mackintosh, Minnesota.
2. Organizing a City for Garden Work—Prof. J. G. Moore.
3. Propagation and Distribution of Plants—H. C. Christensen.
4. Garden Pests and Their Control—Prof. L. G. Gentner.
5. Gardens in Small Cities—W. R. Abbott.

Discussions of Community Gardening by Delegates to Garden Conference.

Thursday Afternoon, 2:30 P. M.

1. Indiana Apple Orchards—F. J. Heacock, President Indiana Horticultural Society.
2. Hardy Fruits—Prof. N. E. Hansen, Brookings, S. D.
3. The Women's Auxiliary—Mrs. N. A. Rasmussen.

(Turn to page 58)

Selecting the Five Best Peonies.

(Paper read by W. F. Christman before Garden Flower Society, published in The Flower Grower, Nov., 1918.)

Having something over 125 varieties of Peonies growing in my garden, and broadly speaking there are about 500 varieties that are admirable for that purpose, you can readily understand that it is no easy matter to eliminate all but five that are best suited for the home garden. As personal opinions are so at variance I think it better that I suggest five varieties that I consider among the very best for the home garden. Among the many varieties now in cultivation, numbering in the thousands, it is obviously manifest that some possess more desirable qualities than others.

* * *

What qualities are to be considered in choosing the five best Peonies for the home garden?

First, let us consider period of bloom. When gentle spring is ushered in and all nature seems to be budding with life and animation, we, who have patiently waited through the long winter months, gladly greet the earliest blooming Peony with considerable pride, for while it may not be the best, it is for the best of its season and fills us with expectant pleasure of what we know will soon follow. Let us follow this early blooming variety with one that makes its appearance a little later in the season in a more dignified manner, having taken more time in preparing for the admiration that is sure to be bestowed upon it. In turn we will follow this with a more tardy arrival and last, but among the very best, we have

(Continued on page 58)

4. Women in Horticulture—Mrs. W. A. Toole.
5. Domesticating Our Native Wild Flowers—Wm. Toole, Sr.
6. Practical Rose Growing for the Amateur—Frederic W. Sparks.

Thursday Evening

Program to be announced later.

Friday Forenoon, 9:00 A. M.

Business Meeting 9 O'clock to 10 O'clock. President's Address, Report of Secretary, Trial Orchard Committee, Delegates to Other Conventions and Election of Officers.

1. Beekeeping In Its Relation to Horticulture—N. E. France, Pres. State Beekeepers Ass'n.
2. Drug Plants—Prof. E. Kremers, University of Wisconsin.
3. Progressive Strawberries at One Thousand Dollars an Acre—W. R. Williams.
4. Insect Review for 1918 and What to Expect in 1919—Prof H. F. Wilson.
5. The Plant Disease Situation in the State—Prof. R. E. Vaughn.

Friday Afternoon 2:00 O'clock

1. Fruit Growing in Iowa—Prof. S. A. Beach, Ames, Iowa.
2. Pruning—Prof. R. H. Roberts.
3. How the Horticulturists Can Help in the Grain Rust ampaign—Dr. S. B. Fracker, State Entomologist.

SELECTING THE FIVE BEST PEONIES

(Continued from page 57)

chosen one of the latest Peonies to bloom; one that appears on the scene, after most of the others have faded and gone. With judicious selection and careful cultivation one may have a succession of bloom for four or five weeks.

Second, we will consider color. This is a matter of personal taste and is so much at variance with different individuals that I have attempted to cover as wide a range of color as possible with the few varieties I have been permitted to name; bright mauve pink, white, ruby, red, pale lilac rose and rose white or flesh being the colors I have chosen.

As a third feature, fragrance is a most desirable attribute to any flower, and naturally appeals to one and all alike. It may be interesting to some of you to know that red Peonies, as a rule, lack agreeable fragrance, while many of this color have no fragrance at all. Fragrance is also found lacking in many single varieties. The full double pink varieties possess the most fragrance. Some of the double whites are exceedingly fragrant.

As a fourth requisite, let us consider blooming qualities. Only dependable blooming varieties have a place in a small collection. Some Peonies would be classed among the very best were if not for the fact that they are shy, unsatisfactory bloomers and not desirable for this reason. I have not given the single varieties a place on my list, and while some of them are very beautiful, they are not as lasting in bloom as the double varieties.

Classed in their season of bloom I wish to present the following varieties to you as my choice of five of the most desirable Peonies for the home garden:

First on my list is Edulus Superba, originated in 1824 by Lemonie. This is a bright pink flower, classed as mauve pink. It is universally admired by Peony lovers on account of its extreme earliness and delightful fragrance.

Next on the list is the universal favorite among the early whites known as Festiva Maxima. Although originated by Millez 67 years ago it still holds undisputed sway as one of the very best early whites. The delicate carmine edges to be found on some of the inner petals adds an air of distinctiveness to the flower that appeals to all.

For our third choice in order of blooming period we have chosen Monsieur Jules Elie, a very large flower of deep pink with silvery sheen. It is a strong grower, free bloomer and one of the very largest Peonies grown. This variety will create a desire to procure more of the higher type of Peony. This variety was originated in 1888 by Crousse.

For the fourth I have chosen Felix Crousse. This variety was originated by Crousse in 1881 and of its type and color it has no superior. It is a large, compact, globular bomb type, brilliant ruby red in color and contrary to most reds, has an agreeable fragrance. It is a very striking flower and a mid-season variety.

The fifth and last one on the list is Richardson's Grandiflora, originated by Richardson in 1883. On account of the extreme lateness of this variety it is one of my favorites. Its fragrance is pleasing and in color it is light pink or flesh tint. It is an exceedingly large flower, opening flat and full. It is a wonderful Peony and a gem in a class by itself. This variety is at its best after all the others named have faded and gone.

With the collection just named you have started a nucleus for future planting that I am sure will instill in you a desire to procure some of the rarer sorts, and you will find that the fascination for the flower will grow as years pass.

I have only chosen varieties that are moderately priced and within the means of all.

One may possess the finest varieties that are in existence but without proper cultivation the most satisfactory results cannot be obtained. The process of planting is simply a preliminary step if you would get the most out of your plants. While it is true Peonies will produce bloom with practically utter neglect, the results secured through proper cultivation and care are so gratifying that you will feel amply repaid for your efforts. They so readily respond to proper treatment that it is a pleasure rather than an effort to coddle them.

Now just a word about cultivation before I close. Peonies like rich soil but avoid placing manure where it will come in direct contact with the roots of the plant. Don't let the ground bake or become hard. Keep it well loosened up. Don't work too close to the plants if cultivating deep, as you are apt to injure the root growth. Peonies, as a general rule are not bothered with disease like some of our other favorite flowers. They can remain for a number of years in the same location without being disturbed. Do not plant Peonies where Peonies have been removed unless new earth is substituted. Avoid planting under trees or in locations where the sun does not get a chance to penetrate. If you wish to cut the bloom for the house, do so just as the flower is unfolding, placing them in water immediately after cutting, but be sure that at least two sets of leaves are left on the stalk or stem from which the flower is removed. If you have a large number of plants or wish to secure large, exhibition bloom, disbud all but the central, or largest bud as soon as they have formed.

Let me urge upon you to try one or more of the varieties I have named, if you cannot find room for them all, and I feel sure that you will realize, as you have never realized before, what a lot of beauty will welcome you each successive year, and if some of you do not become Peony enthusiasts, I will miss my guess.

THE HOME ORCHARD IN WISCONSIN

(Continued from page 53)

Fifth: Do not wait for spring, but go ahead at once to decide what spraying and pruning equipment you will need, so that you can prepare, during the spare hours of winter, a convenient place for it to be kept.

Sixth: Subscribe for a good horticultural paper and join your state society .

Seventh: When the trees arrive, remember that the success of your orchard depends almost entirely on the care you take of it at every stage in its development. Follow faithfully the instructions contained in your bulletin, texts, and papers, and your trees and their product will be a credit to you and to the state, and will furnish an incentive for others to follow your example.

Now that I have shown why improvement is needed, and have suggested a method of procedure, all that remains to be said is that the carrying out of these suggestions requires work. If we desire legislation enacted, we must have bills introduced, and must work to have them passed. If the laws are to be effective, we must have public sentiment behind them. Therefore our work of education entails more than the giving of advice to beginners; it implies the creation of favorable sentiment as well. To create this we must each and all of us make the most of every opportunity to demonstrate the fact that a well-kept orchard is a source of profit and satisfaction, while one that is neglected is a public nuisance that should not be tolerated. In spreading this gospel we must do more than use our voices; we must utilize farm papers, rural newspapers, and every other agency of publicity that we can command to our service.

If we can induce even a few farmers each year to improve on the old methods and thereby meet with such success as will be gratifying to them and an object lesson to others, we shall have accomplished a great deal, and the battle for more and better homeraised fruit will be half won. With new recruits being thus added to our forces; with legislation to protect those who are already employing proper methods, and with education to bring others up to our standards, we may hope in time to see, "an orchard for every farm" as a reality instead of a hope.

Victory Gardens.

That's what we will call them next year. For two years we said "war gardens," for these were help-win-the-war gardens, and the gardeners who tilled them certainly helped in no small measure to win the war.

Reliable figures are difficult to obtain, but reports from 21 garden chairmen, including all of the larger cities except Superior, Sheboygan and Milwaukee total 2,814 acres cultivated **exclusive of back yard gardens,** and a total of 27,143 individual gardens. This is about ten gardens to the acre and a reasonable estimate of the average value of the vegetables produced on each lot if purchased at retail prices is ten dollars, except possibly when planted exclusively to potatoes. This gives $271,430.00 as the estimated value of garden truck raised in the twenty-one cities and towns on land that had before 1917 been unproductive. Adding Superior, Milwaukee and the fifty-three cities and towns exceeding 3,500 in population not reporting we may say conservatively that in dollars and cents the "waste places" yielded one and a quarter million dollars, brought this much in dollars and cents, but actually brought the war gardeners more, so much more that it cannot be computed or measured. Office workers, men and women and other girls and women whose idea of exercise had been a walk from the front door to the automobile or street car, found health and pleasure in the war garden and will not give it up.

Those who tilled the lot for the purpose of adding to the income were not disappointed and none but what enjoyed it.

Two other great benefits have accrued to horticulture as an art, as well as to the ones who had gardens. Firstly, of the thousands, probably one hundred thousand, war gardeners not over one-half had ever before tilled a foot of ground. They know now what it costs in seed, patience and labor to produce a peck of beans or a bushel of potatoes and will be better satisfied in the future to pay a reasonable price for garden produce if forced to buy. It is true that few or none of them had any capital invested but some of them may stop to think about that. This helps horticulture, the second will help the gardeners if they follow their impulses, they are all **land hungry.** The office man who is a flat dweller or the skilled workman, both with comfortable incomes who have been cooped up in rented flats or houses have, for the first time in their lives, had a whiff of fresh air and freedom. They will from this time never be quite content under the old conditions but will want **land,** land their very own. That **is, some of them. That is where we come in. Of those who had gardens for the first time last year** it is a fair guess to say that one-half will become backsliders the coming year unless some one will get behind them and push gently.

It is up to the State Horticultural Society as an organization, and to the members thereof to see to it that the "war" gardens of 1917 and 1918 are planted again this year as Victory gardens. If we, as gardeners, do our full duty in this respect for a year or two, pushing, pulling and coaxing when we can't drive, the ones who really have the spirit of gardening will need no further urging. But our help will be needed this year surely fully as much as last. This is entirely aside from the question of increased food production as an ante-war measure, it is for horticulture, gardening for gardening's sake.

If raspberries or grapes have not been buried before the ground is frozen too hard, they may be laid on top of the ground and covered with stable manure. This manure may be cultivated into the ground next spring.

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
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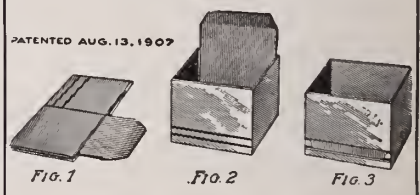

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Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

The Pewaukee Apple.

The Farmers Review for November 18th, 1905, contained the following editorial comment on the Pewaukee apple:

DROP PEWAUKEE.

The Pewaukee apple originated near Pewaukee, Wis., and obtained its name from that place. Being a Wisconsin apple, the Wisconsin fruit growers, being very ambitious to put new varieties of apples on the market, pushed it more vigorously than it should have been pushed. Their State Society too quickly passed upon its merits. Other societies taking the decision of the Wisconsin society for their standard advocated the growing of the Pewaukee. Nurserymen all over the west began to grow it, believing it to be one of the best fruits. Now they are discarding it, having found that it is inferior in certain respects to many of our other apples. It is in every sense a very poor keeper. Orchardists that have grown the Pewaukee in considerable quantities say that they would not again grow it and are advising their friends to leave it alone. In Wisconsin many of the fruit growers are raising their voices against it. The fact that the apple will not keep should be enough to condemn it. While there are other valuable fruits that may be grown there is no use wasting time upon the Pewaukee, which has no virtues in the way of long keeping or high flavor or good looks.

The Secretary, desiring to know how Wisconsin fruit men rated the Pewaukee, wrote to several of the leading growers of that period. The following are among the replies received. No doubt the writers will be surprised to see their opinions in print after fourteen years, and if any of them have changed their minds in the meantime space will be given them for reply.

W. J. Moyle.—The Pewaukee apple, if picked on the green side, is one of the best keepers we have. The quality of the fruit, however, is below par. The tree is an early and productive bearer, but short lived and in hardiness should be classed as medium.

Wm. Toole, Sr.—My opinion of the Pewaukee apply being asked, I will say that I have not planted any trees of this variety and shall not. We have hardier varieties fully as good which cover the same reason. I do not think any of the older orchardists of Sauk county would recommend growing the Pewaukee apple.

L. G. Kellogg.—From my observation of the Pewaukee apple I would not recommend its planting generally throughout the state as it has proved too tender for all sections. It is one of those varieties which you may call a local variety and seems especially adapted to the locality in which it originated and the lake shore region of southeastern Wisconsin. Its quality is good and will keep nearly as well as Northwestern Greening. In my section of the state it matures its fruit very late and usually as soon as the one has produced its second crop of fruit the next spring it is found dead, root and branch.

C. A. Hatch.—My opinion about Pewaukee apple is somewhat limited, being confined to two small trees, 15 or 16 years old and we thought so little of them, they were cut down last spring.

(Turn to page 62)

JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

First, as to tree, it is only second hardy.

Second, blights badly.

Third, is not productive enough.

Fourth, as to fruit, quality only fair.

Fifth, lack showiness.

So you may gather from this that I am not much of a friend of the Pewaukee for this locality.

A. L. Hatch, deceased, wrote as follows: It is of very poor qualinty at its best and since it has the habit of falling from the tree before maturity it is seldom at its best. I've grown it along with Utter, Haas, Wealthy, Newell, Fameuse and many others and the Pewaukee is inferior to all of them and I would not plant it.

If these opinions are sound, there would seem to be no good reason for retaining the Pewaukee on our fruit list.

Advantages and Disadvantages of Fruit Growing in Michigan.

F. Kern.

This topic might be spread over a great deal of paper, but out of respect for you and for those who stay awake while you read this, I will be brief.

Soil, in all the fruit sections I have visited in this state, is what Wisconsin farmers would call SAND. It looks in some districts like mighty poor sand, and in some districts there can be no mistake about it. Where the soil is fertile, it is very easily farmed, and for that reason is, as a rule, better cultivated than are Wisconsin orchards. (I do not refer to FARM ORCHARDS.)

Many of the growers are specialists, having made it a business and a study for years past, and contrary to your belief and mine until 1916, there is some mighty good fruit grown in Michigan, and, with a soil that can be tilled with the least possible effort and a productive soil, and, with a climate that Door and Bayfield counties have boasted of so long and so loudly, FROST PROOF "where the moist atmosphere crossing from water to water" etc., there are some advantages in growing fruit in Michigan. I have never seen a district where a greater variety of fruit can be grown than up in the Grand Traverse Region, and I would enjoy telling you of this district if time and your patience would permit, but I must shorten this story to fit conditions, so will pass any reference to this district.

Another of the great advantages of fruit growing in Michigan is, its markets, and the vast territory in which we can market with the excellent transportation services. Michigan is one of the greatest manufacturing states in the Union today, though few know or believe that, to illustrate:

While Michigan stands fifth in the production of potatoes in the U. S. this season, the state does not produce enough potatoes to supply the home state consumption. I mention this to give you an idea of the demand for Michigan products of all kinds, and, were it not for the haphazard method of marketing, the fruit grown in this state, I would make the statement that no other state in the union has anything on Michigan, but the marketing system is as far from perfect as any marketing system in any state in the U. S. and this is one of the greatest disadvantages it has, and I question very much whether we will ever get a satisfactory marketing system in this state as long as the commission man sends out his buyer or solicitor, or both, to tantalize the growers with a few shekels of gold and blinds his vision to any better plan than to sell outright or to consign to his house. The district from St. Jo to the Straits is patroled from the last of May until the last apples are shipped in the fall by this army of representatives of Commission Houses, who seem to prefer to pay cash for their produce to the individual, or the man representing the individuals, rather than tie to any organization. Personally, I have no complaint to offer, for I sold every straight car of fruit I had this season, amounting to nearly 150 cars, all f. o. b. Traverse City, for cash, and only had one car out of the lot turned down and that was by a Minneapolis firm.

McKAY NURSERY COMPANY

MADISON, WISCONSIN

Nursery Stock of Quality

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

But the state is behind the times, years behind the times, and that is the sole reason why Michigan fruits are quoted lower in the markets than any others at the same season of the year. They sell cheap, or consign and get less, and because the price is invariably low, they take little interest in their grading or packing, believing they will get only about so much anyway and thinking there is no reason for putting up a good pack when any old pack will bring the same price. Do not understand that this is the condition in all districts, nor that this is the disposition of all the growers in every district, for I believe that in this district during the past season the members of this organization did put up the finest pack of the finest cherries I have ever seen. They could not be improved upon very much, and when I tell you that they were put up with a guarantee to net 25 pounds to the crate, and that on nearly fifty thousand crates there was not a claim for shortage filed, you will see that so far we were honest in this district. In a few others that I have visited, they are improving their pack, but there is enough fruit at all these points so that the local buyer is a factor, and naturally, he tries to disturb organization, and fools are not all dead yet. Organizations are not organizations in a true sense of the word, and this is one of the serious disadvantages of fruit growing in Michigan.

Now, if I were present, I should like to talk a few minutes about production of fruit and the future of the fruit business in Michigan, and in Wisconsin especially, and Illinois and New York should be included.

There has been so much said about overproduction of fruit in the United States, that, for the last four years, the plantings of tree fruits have been reduced annually until practically nothing has been planted except to fill in, and in the commercial districts of the northwest you would be astounded at the reduction in acreage. In the Rogue River Valley ten years ago there were 25,000 acres of tree fruits growing. Today there are less than 12,000 acres, and a great deal of that will sooner or later be dug out because of pear blight, or because they cannot grow fruit at a profit, and no new orchards are being planted there. At Salem, Oregon, the sweet cherry was once the wonder of the west, and it is now scarcely grown commercially.

At Hood River, the "Home of the Big Red Apple," the acreage today is less than half what it was ten years ago, and there are no new plantings. At Yakima the situation is the same, only more striking, and at Grand Junction the same. At Spokane there is a Development Company that has an acreage of about 7,000

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acres, but for several seasons past the frosts have ruined their prospects until there is a waning interest in the project. The famous Bitterroot Valley, the home of the McIntosh and the Transcendent Crabapple, is practically out of the game, and in a conversation with one of the largest nursery men in Michigan yesterday, I learned that the planting of trees in Michigan the last three years had not supplied the losses.

At Watsonville, California, the great Bellflower district, owned and farmed principally by Slavs, this, 1916, crop of apples was sold on the trees early in the season at 20 cents per box on the trees, and you can readily see that they will not grow Bellflowers very many years at that rate, and, in the face of all this need we worry over the question of overproduction? May we not better bend our efforts toward production, better production, better grading, better methods of marketing, better varieties of better fruit, so that we can supply the demand when the result of no planting begins to be felt? And, if our secretary does not succeed in digging out the Farm Orchards, see that he improves them so that they will not menace the commercial fruit growing?

Two Darkies were enemies and had fought several times, but never to a finish, and it was decided by their friends the trouble should be settled once and for all and that this time they must fight it out, so they were instructed by their seconds that when either was willing to quit just say "sufficient." The fight started and lasted until both were exhausted. They leaned against the barn to rest and then went at it again, and finally, about ready to drop, one gasped, "Sufficient," and Sambo said, "Praise de Lord, I'se been trying for over an honah to think of dat word."

Apple Butter Making.

C. R. Tuttle, Baraboo.

Of all the products of the apple, Apple Butter pleases the most people, especially the children. A small boy was overheard to say, "I like apple butter better than butter." When asked why, he replied, "because you let me put it on thicker."

This delicacy is much in use in the older apple growing sections of the country, and becomes almost a necessity wherever known. Apple Butter is easily made and as inexpensive as any other apple product.

In the mill I use good, sound apples, after washing them in clean water, they are run through the apple grinder, then placed in the cooker with six to eight gallons of fresh cider for four bushels of apples.

This is cooked by steam about forty minutes, or until cooked to a thin sauce, then passed through the colander, which removes all stems, skins and cores. The sauce is then returned to the cooker and one quart of heavy boiled cider, one pound of sugar and one-half ounce of cinnamon, or other spices is added to each gallon of sauce, which is then cooked to a consistency to suit.

About one-half sweet and sour apples or all varieties of apples mixed, make the best apple butter. Spices should be added after the cooking is done.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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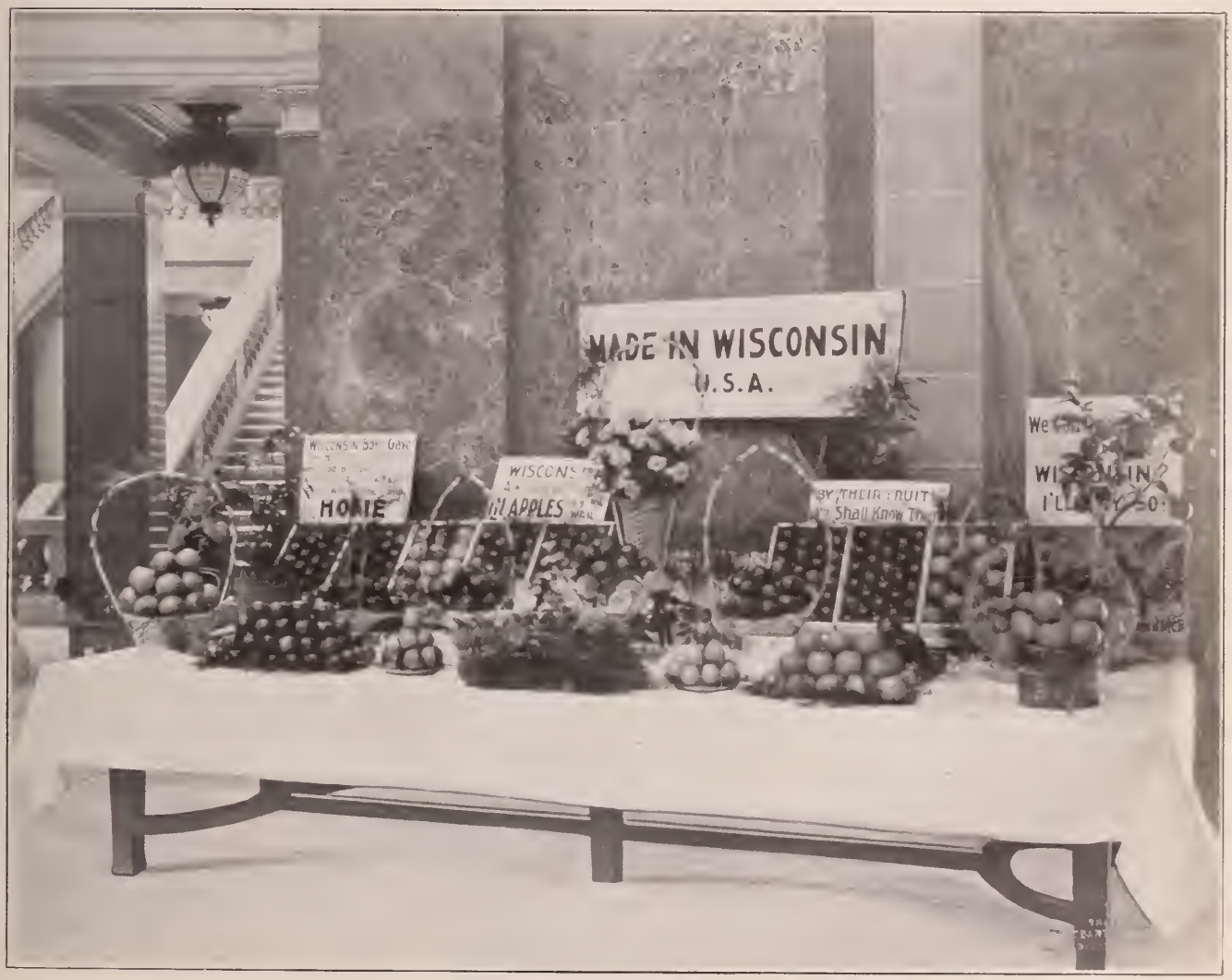
WITH SIXTEEN PAGE SUPPLEMENT



"Made in Wisconsin" Fruit at the Annual Convention.

Roses, and Their Culture Outdoors.

Fred W. Sparks.

"Beecher," the great American preacher, said, "The sweetest thing that God made and forgot to put a soul in, is the rose; the 'Queen of Flowers.' "

This title might appear to be somewhat of a misnomer, when applied to the blooms so often seen in gardens of the mid-west.

I have no intention of asserting that we here can grow roses to equal those grown in the British Isles, or those of the Pacific coast, yet if we observe the many details so essential to success, roses of good quality will be our reward.

Dean Hole, the great English rosarian, says in his "Book About Roses," "He who would have beautiful roses in his garden must have them in his heart. He must love them well and always. To win, he must woo as Jacob wooed Laban's daughter, though drought and frost consume."

The first and chief essentials are suitable soil and location.

(Soil) Roses thrive to perfection in a somewhat heavy soil; that known as a clayey loam being the best.

Soils that are light and sandy in character, may be built up by the addition of friable yellow clay, turf sod, that has been stacked at least six months, and good cow manure.

All soils should be freely sprinkled with coarse bonemeal before digging; this tends to the production of a good firm growth.

(Situation) This, if possible, should be on a gentle slope; should be well drained, and exposed to full sun and air.

Shelter from the north and east wind is desirable, though it should be far enough away to cast no shade upon the plants, and to prevent roots of trees from robbing the rose garden of ites fertility.

(How and when to plant) The two months most suitable for planting dormant stock, are October and April. Potted plants may be set out as late as June, but even these are benefited by early planting.

The distance between each plant may be governed by the size of the bed; 20 to 24 inches apart is the best distance.

What is known as "worked stock," i. e., that which has been budded or grafted on Brier or Manetti roots; should be planted deep enough so that 2 or 3 inches of soil cover the point of union between scion and stock.

While touching upon this question of worked stock, it brings up the oft discussed question, as to which is best, stock that has been so treated, or that growing upon its own roots.

It has been proved that many varieties do as well or even better on their own roots; but taking all varieties into consideration, there is no doubt that the budded or grafted stock will be the more satisfactory. The deep planting previously recommended of this stock also encourages the production of roots from above the point of union, thus making success doubly sure.

Careful watch must be kept during the summer months for sucker growths. These spring from the stock on which the plants have been "worked," and if allowed to remain they would soon smother the plant. They are readily detected by having seven leaflets instead of the usual five; whilst the stems are covered with reddish hairlike spines. Cut, or break them off cleanly at the point where they originate, otherwise their removal would be only temporary.

(Pruning) This is governed by the type one is pruning. The "hybrid perpetual" class are best when pruned back rather severely; some exhibitors prune them within a few inches of the ground, but this is unnecessary for garden purposes, and 12 to 15 inches will be found to produce flowers of good quantity, and quality.

In the case of "hybrid teas" the methods differ; though some will be found so vigorous that the pruning recommended for "perpetuals" will suffice; others will require little pruning with the exception of cutting off the tips, removing side branches and all weak, straggly growths.

The best time for pruning is the month of April when the sap first commences to flow, and the buds are beginning to swell. Always prune just above a bud pointing outward; this keeps the center of the plant open to admit light and air, and preserves a good shape.

(Watering) Though the rose does not like "wet feet" they will require frequent soakings of water during the hot, dry weather, previously sprinkling the beds very lightly with bonemeal, and at such times a forcible spraying with water from the hose will help to keep the plants clean and free from red spider and thrip.

(Mulching) In July a good mulching of cow manure will help conserve the moisture in the soil; and build up a good growth for the following season. Frequent waterings of liquid manure are also very beneficial.

(Control of insect pests; and diseases) For the destruction of Aphis, or green and black fly as it is usually termed; nicotine solutions will be found the most effective. There are many different brands on the market, the price differing according to the percentage of nicotine they contain. They are put up in cans of varying size, with full instructions for mixing.

For the rose slug, which is really the larva of a small moth, and is readily detected by the skeletonized appearance of the leaves; constant spraying with arsenate of lead has been found very effective. Some people object to the white deposit this leaves upon the foliage, and have found hellebore powder dissolved in boiling water, at the rate of a tablespoonful to 5 gallons an equally good remedy.

Lime sulphur solution will be found best to combat the leaf spot, and dry powdered sulphur dusted on, the best remedy for mildew.

(General cultivation) The beds should be dug over in the spring, after pruning has been done; giving them a good dressing of bonemeal. Keep them thoroughly cultivated, for the double purpose of preventing growth of weeds, and conserving soil moisture. After they have been mulched cultivation will not be quite so necessary for a time, but weeds must be pulled out, for these beget insect troubles.

Disbudding must be attended to, removing the side buds, and allowing the central one to remain. A variety such as Gruss an Teplitz, is in my opinion better left undisbudded.

(Winter treatment) Owing to the rigorous winters we experience here, great care must be taken in the covering of all roses. Soil heaped up around the base of each plant, and left till hard frosts set in after which it should be covered with leaves, hay, or any dry litter, is the most satisfactory method; but is not always practicable.

Another way is to bend the tops of the plants over and securely peg them to the ground, waiting as previously advised for the ground to freeze, when they should be covered with at least a foot of dry leaves; marsh hay being placed on top to prevent them from being blown away. This covering may be removed in March. It is better not to remove all at once as hot suns and cold winds are apt to damage the wood so long covered.

I feel that this paper would be incomplete if I did not make mention of the climbing, or rambler roses. The treatment of these is necessarily different. After blooming, the old wood should be cut entirely away, and a good dressing of cow manure applied to the roots, which will cause the production of strong, vigorous shoots, which sometimes will attain the length of 12 feet, by the end of the season. During their growing season they must be kept constantly tied, and if these new shoots are produced too profusely they must be thinned out, for it is the well ripened wood that will produce the best results. In the winter they must be taken down from their supports, and well covered as previously advised for other varieties.

Some people will say, "Oh, I like roses well enough, but I have no time to attend to them!" To these I would recommend a few of the Rosa Rugosa hybrid, Conrad F. Meyer. It is perfectly hardy, requires little pruning unless it be to remove dead wood, and seems quite at home in any soil or situation.

Varieties.

Hybrid perpetuals—Frau Karl Druschki, J. B. Clark, Ulrich Brunner and Mrs. R. G. Sharman Crawford.

Hybrid teas—Maman Cochet, Gruss an Teplitz, Lady Ashtown and Ecarlate.

Climbing or rambler types—Crimson Rambler, Dorothy Perkins, American Pillar and Tausendschon.

Delphiniums are among the best perennials for the garden. Get good strains and give them good care, and an abundance of flowers will be had in season.

It is a poor farm indeed that can not afford a good strawberry bed and a raspberry patch. Now is a good time to select and order varieties for next year's planting.

The red twig dogwood and golden willow begin to show their color on bright warm days now. In contrast with the snow they add a warmth and cheeriness that makes them worth while.

There is no advantage in trying to grow water plants on any land or prairie plants in the timber. Consult the habits of the plant before you set it.

Poultry droppings collected and kept dry until next year will furnish a good supply of nitrogen for garden crops. If allowed to get wet, they lose much of their value.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

The Annual Convention

The thirty-second annual meeting of the Wisconsin State Cranberry Growers Association was held in Society Hall, in the old Wood Co. Bank building at Grand Rapids, Wis., Tuesday, January 14, 1919.

President Searles called the meeting to order at 10 a. m. and addressed the members, advising better methods in preparation and care of marshes and the great need of providing and conserving water supply.

After President Searles' address the minutes of the thirty-first summer convention were read and approved. The treasurer's annual report was read, approved and ordered put on file as was also the secretary's financial report.

Miss Anna Bamberg reported the State Fair exhibit at Milwaukee in September, 1918, as being ready on time and attracted much attention. Feels the money expended for same was a good investment, but to make it pay its best should have many more exhibitors with correspondingly more cranberries.

The State Fair comes at a very inopportune time for a good display of cranberries as it is too early in the seasan for fully developed ripe fruit. Two to three weeks later would make a great difference in the quality and undoubtedly quantity of berries that could be forwarded for this purpose.

Owing to the inability of our delegate, Mr. E. C. Bennett to attend the Horticultural meeting at Madison, January 8, 9, and 10, Mr. C. M. Secker kindly consented to serve and very ably represented our Association. Mr. Secker's suggestions for the future should receive consideration.

After an hour for dinner, business was resumed with the election of officers for the ensuing year. All the old officers were reelected. The president by ballot, the secretary being instructed to cast the ballot for the remaining officers.

Resolutions of sympathy and regret over the death of our esteemed member, Mr. Russell Case, were submitted and adopted.

Papers were presented by A. U. Chaney, Andrew Bissig, C. D. Searls, Dr. Neil E. Stevens, Dr. H. F. Bergman, S. N. Whittlesey, Miss L. M. Huyck and H. J. Gebhardt. All appreciated the very interesting and instructive talk of Dr. Fracker of Madison. Before adjournment it was, by almost unanimons vote, decided to hold the next annual meeting at Madison in connection with the State Horticultural Society.

Mrs. S. N. Whittlesey, Sec'y.

Personal Items

Harrison Kruger, who has been in service since last Angnst, received his discharge and is at home again, arriving at Cranmoor January 11.

Roy M. Potter is not yet mustered out but was granted a furlough, spending the holidays with his parents, Mr. and Mrs. M. O. Potter at their Grand Rapids home.

Mr. A. C. Bennett, or as he is affectionately called, Grandpa Bennet, had a fall the first of the year and broke all the bones of one wrist.

Mr. Dayton R. Burr of Berlin, another old-time member, had a stroke of paralysis early in January, and though improving, is still in the hospital at Berlin.

Another to receive our sympathy is Mr. E. C. Dano of Tomah, who was seriously injured in a railroad accident which came near costing him his life.

1918 Deductions of a Cranberry Merchant

Lyda M. Huyck

I use the term Cranberry Merchant because of the saying that than one no one could be busier.

This year has been busy for me in works, and as I know you all work, there isn't any use telling you abont my labor and trouble for fear I wouldn't have any help to do the labor, etc.

Along with being busy, however, there have been some lessons very thoroughly learned—and fearing I may forget them and hoping they may be proven in others' experiences—I am setting these lessons down.

Our bog has many advantages, of which we are proud, but with these I am assured we have samples of all the disadvantages bogs are heir to.

After a while I hope we can enlarge onr acreage and when we do there are some of the things we will be assured of from onr 1918 deductions. I do not mean that these things were altogether discovered in 1918, but were considerably confirmed.

When we build more bog, since

we have sand and peat in profusion, we will be very discreet about using peat for anything but that for which we think peat is adapted, that is for dyke sides and fertilization of our vines—when the peat bed varies in thickness above the foundation sand. We have learned that as time passes the thicker areas of peat settle more than the spots where the peat is thin over the foundation, leaving us with high spots and valleys.

This, of course, means an unduly large volume of water for flooding, as well as the extra time consumed when frost is impending.

We will endeavor to obtain very nearly perfect levels, even at high cost with sand and not peat, and then we will put the peat on in a uniform thickness.

Our meandering creek bed, if filled at all, will be filled with sand up to the plateau level, for a peat filling of such a hole shows forever after in settlement and weeds and grass and trouble and sorrow.

We will obtain fresh cut vines and these will most certainly be of the proven best cultivated variety, especially as to size of berry, keeping quality and fecundity. We have paid many times over for the most costly vines obtainable, in replanting dried out and sickly specimens in remilling and accepting cut prices for poor berries and in less than the top price for little pie berries.

We will arrange for good roads surrounding each section—for a man at rakers' wages in water with hip boots is hardly a profitable investment for long hauls.

Our flumes will go down to a foundation that can be trusted or will have double and tight sheet piling at both ends driven clear to China, and will extend under the wing walls as well.

Because we have learned how comfortable it is to be able to see the condition of our flumes they will be open and the flume boards will be interchangeable. These flumes will be of large capacity, of sufficient width to permit flooding an acre in one half hour without too much current.

We will keep to our established policy of spring flooding, to draw the frost gradually from the ground and gain the vital quick start when we finally turn things over to Old Sol and we will re-sand at least every 3 or 4 years.

We will keep everlastingly and everlastingly after the willows and bad grasses, pulling and digging and keeping all adjacent areas well mown to prevent seeding.

We will continue with our well proven net picking—always having quantities and quantities of drying crates for the berries immediately they are removed from the bog and never storing or barrelling a single berry until that berry is bone dry as to its skin.

We will, during the critical period, keep Big Ben and the thermometers, the weather reports, the oil lantern and flume board hook right on the job and no pleasure or trouble or pain, or anything whatever in heaven or the other place or in the waters beneath will prevent the flood going on when the flood is needed—and going off in the morning before the sun gets hot.

We can't get anything for nothing anywhere, especially from Dame Nature. I am willing to pay, but at times have despaired, but I will say for 1918 that the abundance of big, red, sound cranberries, which threatened to engulf our fruit house and overwhelm our transportation facilities, was a fitting and complete reward for all the trouble.

Resolution that the State Senate Did Not Adopt.

A state senator who visited the fruit show the first day of the convention was determined that the senate, as a body, should be informed of what was going on and requested an officer of the society to write out a resolution which he would introduce.

The resolution was written and handed to the senator, but was not introduced, nor was any excuse offered for failure to do so. Here follows the resolution:

Whereas, we all know that God might have made better apples than those now on exhibit by the fruit growers of Wisconsin, but he never did, and

Whereas, members of the State Horticultural Society now in convention assembled have brought together for our benefit this collection of beautiful Wisconsin grown apples and have also, wisely and with much forethought, provided for us a demonstration in grafting and have extended to us an invitation to view the apples.

Be it resolved, that the senate accept this invitation.

Save all wood ashes for use on the garden and fruit plantation next year.

Wash the ferns and leaves of house plants once in a while to rid them of scale and other insect growths.

GEORGE J. KELLOGG,

Born March 20th 1828; died January 7th, 1918.

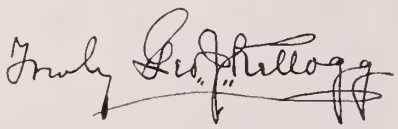
In November, 1853, a group of sturdy pioneers met at Whitewater and organized The Wisconsin Fruit Growers' Association. Of that group George J. Kellogg, then twenty-five years of age, was one. It required courage and fixedness of purpose to venture into the wholly untried field of fruit growing in a new country and courage was one of George J. Kellogg's characteristics. He was closely associated with this Society for half a century and the Society conferred on him the highest honor within its gift, honorary life membership.

He wrote much for farm and horticultural papers, and possessed, in a remarkable degree, the faculty of presenting his subject in a clear and understandable way.

On his eightieth birthday he wrote a letter to his home paper, The Janesville Gazette, which, as it gives the intimate story of his life such as we believe our readers will appreciate is here reprinted:

Janesville, Wis., March 20, 1908.

Editors Gazette: I am rejoicing in a shower of four-score birthday letters. I was born in Cicero, N. Y., and received my first education in Fulton, N. Y.; emigrated to the Indian land of Wisconsin, Aug. 2, 1835; graduated under the tutorship of our lamented Gov. Harvey at Kenosha, Wis.; spent 2 years in Wisconsin pineries; taught school two winters; drove five yoke of oxen across the plains to California in 1849; dug gold in California three years, took out about $15,000; returned home by the isthmus in



1852; located in Janesville and went into the nursery business "indoor" and out; have made something of a success of horticulture; turned over my nursery and business to my two boys, L. L. and M. S. Kellogg, in 1899. I moved to Lake Mills, quit work, set out a quarter of an acre to 70 fruit trees (grafted one older tree to 40 kinds of apples), 30 grape vines, 80 varieties of strawberries, $200 worth of ginseng, lots of other fruits, took 35 first prizes at Jefferson county fair, 1907, and am hale and hearty, with not an ache or a pain.

Read all my letters today without glasses, as I am writing this.

Geo. J. Kellogg.

Resolution in Memoriam Geo. J. Kellogg.

Adopted at Annual Convention.

Whereas our Heavenly Father has taken to his final reward our long time and oldest member of our State Horticultural Society, George J. Kellogg, and

Whereas, our brother member was always an enthusiastic worker and helper for the cause of Horticulture, Therefore,

Resolved, That we, the members of the Wisconsin State Horticultural Society, in convention, assembled herewith, express our appreciation of the energetic helpfulness which our brother member, Geo. J. Kellogg, has given for his fellow members during so many years of his long life.

Resolved, That we extend to the children and other near members of the deceased, our sympathy for their loss.

Resolved, That the Secretary of our Society is instructed to spread these resolutions on the records of the Society and to send copies to the children.

The Promised Land.

The young people of today, men and women of fifty to sixty years, can recall first-hand stories told them by "forty-niners," men who accomplished a journey of 3,000 miles across plains, deserts and mountains, a land uninhabited except by coyotes, rattlesnakes and hostile savages. The journey recorded in Exodus was a pleasure trip in comparison, and the Crusades a Sabbath day's journey. It required courage of a high order to undertake such a trip. Geo. J. Kellogg not only made this journey, but kept a diary of the entire trip and at our annual banquet a few years ago gave us an account of it. Here it is:

At the age of twenty-one I left Southport (now Kenosha, Wis.) and crossed Wisconsin by stage, 188 miles. On April 5th I joined a party with five yoke of cattle in Jo. Daviess county, Illinois. The roads were bad and the 42 miles to Clinton, Iowa, were covered under difficulties. The distance from Clinton to Omaha was 308 miles and we were frequently stuck in the mud which seemed seven feet deep. It took eleven yoke of oxen to pull us out and yet we had taken on but few supplies.

At one camp in Iowa we turned our oxen into an unhusked corn field at a few cents per head a day. During our halt here I killed a wild turkey and a deer. They had to tie me up that night. On May 25th we crossed to Omaha on a ferry, allowing the cattle to swim across. Indians were plentiful and we organized a company of forty-two wagons and stood guard in Omaha. On May 25th we pulled out for the plains, crossing the Elkhorn on a log raft. Realizing that the company was too large with ten wagons, we pulled out and followed the Mormon trail by guide book. June 2nd crossed the Loup, one-half mile wide, three feet deep. Wet our bedding and provisions; lay by to dry out. Saw so many Indians one day we sent out a guard for our hunters back in the hills, who frequently brought in antelope. Hail stones two inches in diameter fell. Got our first Buffalo meat—315 miles out.

Geo. J. Kellogg and His Longfield Apple Tree.

June 13th saw a buffalo chase and capture. Platte bottoms badly cut up with wagons and grass all gone. Mosquitoes bad. Met mail wagon and sent letter home.

June 27th left for Ft. Laramie. Everybody throwing away pork, flour, and everything, even stationery, to lighten loads. Often we found newly made graves along the trail. We traveled down a hill five miles long.

July 1st met a team going back to America, 638 miles. We had some of the worst west winds I ever saw and air and water was polluted. There were forty dead cattle in sight at one time. One team of six oxen lay where lightning had struck them—not a chain unhitched.

July 11th we reached Independence Rock, named by Fremont, 723 miles out. Thousands of names engraved. First sight of snow peaks of the Rockies, although some were willing to bet it was not snow.

July 19th crossed South Pass. Could hardly tell when we reached the summit of the Rocky mountains 824 miles from Omaha to forks of Oregon, California and Salt Lake roads. We went by way of Bear river and Steamboat spring, over lava beds and around extinct volcanoes.

Aug. 7. From Bear Mountain we saw Salt Lake, hunted Grizzlies, passed Castle Rock and Castle Hotel which were from 50 to 400 feet high. We let our wagons down a mountain by ropes, passed boiling hot springs hardly out of sight of trains or dead cattle.

Aug. 20 reached Humbolt river, 1,331 miles out. Ice was a half an inch thick. All trains that had trouble with the Mormons at Salt Lake had cattle stampeded for 300 miles by Indians or Mormons. We passed three Indians catching and eating frogs and grasshoppers and next morning found five arrows in two of our oxen which penetrated the pouneh, food oozing out of the wounds. We drove these oxen behind the wagons and Mr. Indian lost his beef. The oxen were chained to the wagons and we had to guard that night. Human nature out-cropped when outside all law and civilization. Sutton and his wife had a few words, sawed

Continued on page 76

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The Convention.

An excellent report of the convention was written by Mr. McIntyre, of the Wisconsin Farmer, and is given herewith as our official report. Mr. McIntyre did not overrate the fruit exhibit, it was not only the best ever shown at our convention, but considering quality ranking as one of the best ever shown in Wisconsin.

The attendance was as good as last year and interest in the program greater. Those who expressed an opinion at all said it was a well balanced program. Some of the professional fruit growers complained that their interests were neglected. Possibly, although twenty-one per cent of the entire program ought to satisfy any one of the "15 varieties" of horticulture on the program.

The aim is to satisfy the greatest number.

Visitors from other states commented on the fact that all present participated in the discussions. This has always been our habit. All in all, the after taste is good:

Report of Convention by Mr. McIntyre

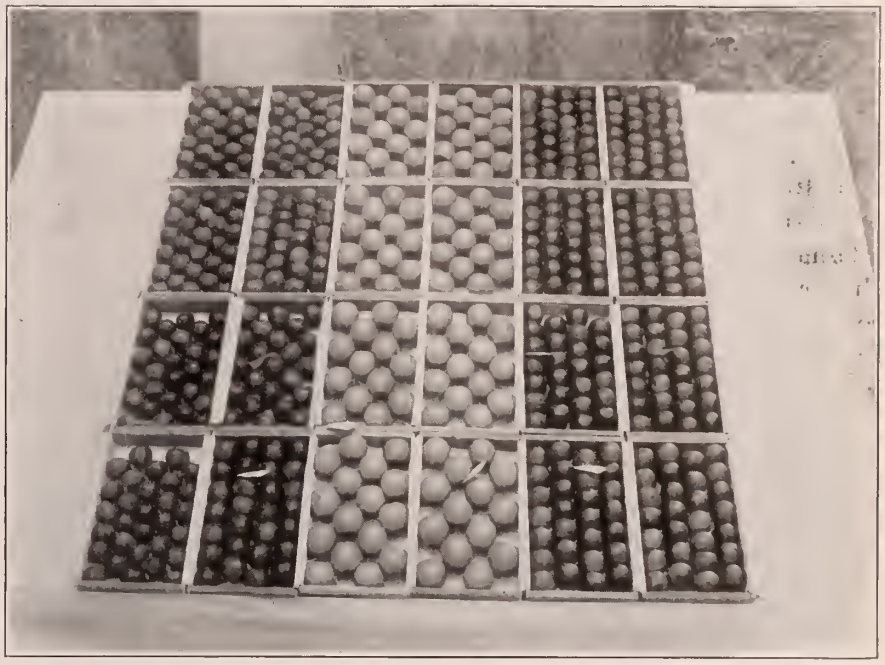
Fruits and flowers of victory and peace, both material and spiritual evidence of the loyal part played by Wisconsin men and women in the world war and numerous constructive addresses on higher standards in food production marked the annual winter session of the state horticultural society held at Madison on January 8th to 10th inclusive. The best and finest displays of Wisconsin apples ever gathered for a state exhibition greeted the visitors last week. This was plainly the result of long effort and education in apple culture and selection, and came as a surprise to many who had anticipated a mediocre show on account of labor shortage and a light crop. The exhibits were all from ordinary cellar storage, and Prof. J. G. Moore, the judge, who had visited the recent horticultural show at Des Moines, Iowa, pronounced the Badger apple exhibits safely ahead of anything he had seen this season. No less an ingrained devotee of fancy western stocks than R. H. Roberts, an Oregon grower now with the state university, admitted that the 1919 apple show at Madison in quality and pack measured up to the high standards of his native land. It may be said that in building up such a standard Mr. Roberts has been of great help to Wisconsin, inasmuch as he has taken charge of the apple grading work during the past year and has held several schools on sorting and packing.

Notable among the exhibits of tray samples were the splendid apples from the orchards of the Kickapoo Development Company of Crawford county, of which J. A. Hays, vice president of the society, is active manager. Their assortments of McIntosh Reds, Wealthy, Northwestern Greening, Tolman and Newell were indeed a delight to the eye and a temptation to the palate. Other varied and generous samples in trays were shown by individual growers who are slowly building up a noteworthy commercial orchard business in Wisconsin. The Scott Winter, Ben Davis, Fameuse, Wealthy, McIntosh, Jonathan and York Imperial called forth many remarks of delight and pride in Wisconsin's resources. This is the first time that the professional tray-pack system of exhibition has been used in the society's show and it surely made a lasting impression which cannot be gained by the old methods.

The business meeting was well attended, there beeing more than 60 delegates present. The society reelected N. A. Rasmussen, Oshkosh, as president, with J. M. Hays, Gays Mills, as vice president. A change in the by-laws was passed whereby Sec. Frederic Cranefield becomes the holder of two offices, that of secretary and treasurer. The board of management hitherto consisting of president, secretary and treasurer, was changed to include the president, vice president and secretary-treasurer. An executive committee

representing the different congressional districts was chosen in the usual way, by nominations of local delegates. A resolution was passed urging the society and all active commercial fruit growers to plan on making an extensive official exhibit of Wisconsin fruit at the next mid-western show, to be held at Chicago next winter. It is thought that our state can beat Iowa, Illinois, and Minnesota at apple showing, and its chances are good for securing most of the sweepstakes and banner honors in such a mid-western event. Of course, New York does not come west to enter the Chicago exhibition.

Secretary Cranefield made a simple and impressive report of the war-time activities of the state horticultural society. "Peace With Victory" was his significant theme. He reviewed the great war-garden campaign carried on in 56 Wisconsin cities by the horticultural society assisted by the Wisconsin College of Agriculture and the agricultural extension department. There were seven different garden pamphlets issued and 46 special meetings arranged for instruction and encouragement to amateur vegetable growers. It was said that the state trial orchard work is nearing completion without any movement to extend or enlarge the operations. In other words, its real mission has been accomplished inasmuch as the orchards have demonstrated where commercial apple growing is and is not profitable under our differing soil and climate conditions. Inasmuch as there was a universal shortage of good small fruits on the open markets of our state last season, Mr. Cranefield urged a greater attention to expanding the bush and vine fruit industry. The commercial apple business is getting a successful start toward big things, but we need more energetic advancement on strawberries, raspberries and such necessary lines. Not everyone should take this as a hint to rush in promiscuously, but only those who wish to learn or who have natural inclination or experience are the proper development agencies.



Overflow exhibit of Kickapoo Development Co. at Annual Convention showing Tray Pack now adopted by State Fair and Society for an exhibition package. The diagonal pack, two middle rows, is the only one that should be used.

President Rasmussen pleaded for larger acreages of fruit of all kinds and more local horticultural societies. He commended the apple-grading law and suggested that our society join other state units in perfecting a national apple-grading law. He also touched upon the revival of rural landscape gardening and said the society and its ally, the agricultural college, was always ready to help farmers select shrubbery and plants for beautifying home grounds. Now that the war clouds have passed, there will be more time and energy left for such desirable work in making our country homes more lovable and attractive.

Exhibitors—L. B. Irish, C. J. Baer, Baraboo; Kickapoo Development Company, Gays Mills; J. P. Olson, Ripon; John Howie, Wannakee; A. K. Bassett, Baraboo! A. N. Kelly, Mineral Point; Fremont Lounsbury, Watertown; H. H. Harris, Warrens; John F. Hauser; Bayfield; N. A. Rassmussen, Oshkosh; Chet Wilcox, Madison; L. E. Birmingham; D. E. Bingham, Sturgeon Bay; F. B. Sherman, Edgerton; W. A. Toole, Baraboo; E. G. Dano, Tomah; Elm Lake Cranberry Company, Mrs. Pauline Smith, H. O. Potts, Carl Gertsenger, A. Searles and Son, B. Clinton, A. E. Bennett and Son, Grand Rapids; S. H. Whittlesey, Cranmoor; Charles N. Shepard, Madison; F. T. Brunk, Eau Claire; H. C. Christensen, Oshkosh.

Best 15 varieties of apples—1,

Lounsbury; 2, Bassett, 3, Sherman.

Best five plates of five varieties—1, Bassett; 2, Baer, 3, Irish.

Best plate displays of the following:

Ben Davis—1, Lounsbury; 2, Kickapoo Co.; 3, Kelley. Dudley—1, Birmingham; 2, Hauser. Fameuse—1, Bassett; 2, Baer; 3, Irish. Gano—1, Kelly; 2, Bassett; 3, Baer. Gem—1, Irish; 2, Baer. Gideon—1, Sherman; 2, Lounsbury. Golden Russet—1, Baer; 2, Bassett; 3, Howie. Grimes Golden—1, Bingham; 2, Birmingham; 3, Sherman. Jonathan—1, Lounsbury; 2, Bassett; 3, Kelly. King—1, Bingham. Maiden Blush—No first; 2, Lounsbury; 3, Bassett. Malinda—1, Rasmussen. McIntosh—1, Kickapoo Co.; 2, Bassett; 3, Sherman. McMahan—1, Rasmussen; 2, Harris; 3, Lounsbury. Newell—1, Kickapoo Co.; 2, Irish; 3, Baer. Northern Spy—1, Sherman; 2, Lounsbury; 3, Bassett. Northwestern Greening—1, Bassett; 2, Harris; 3, Kickapoo. Patten—1, Bassett. Pewaukee—1, Bassett; 2, Lounsbury; 3, Shepard Plum Cider—1, Bassett; 2, Lounsbury; 3, Sherman. Salome—1, Harris; 2, Lounsbury. Seek-No-Further—1, Sherman; 2, Bassett 3, Lounsbury. Scott Winter—1, Baer; 2, Harris, 3, Irish. Tolman—1, Baer; 2 Kickapoo; 3, Birmingham. Twenty Ounce—1, Rasmussen 2, Lounsbury. Utter—1, Bassett; 2, Kelly; 3, Lounsbury. Wagener—1, Sherman; 2, Lounsbury. Wealthy—1, Kickapoo; 2, Bassett. Windsor—1, Kelly; 2, Bingham; 3, Sherman. Wolf River—1, Baer; 2, Bassett; 3, Lounsbury. York Imperial—1, Bassett; 2, Kickapoo; 3, Sherman.

Best tray display of the following:

Ben Davis—1, Kickapoo 2, Lounsbury; 3, Bassett. Fameuse—1, Bassett; 2, Sherman, 3, Irish. Gano—1, Baer. Gem—1, Irish. Golden Russett—1, Kickapoo; 2, Bassett; 3, Baer. Jonathan—1, Lounsbury; 2, Bassett. Maiden Blush—No first; 2, Lounsbury. McIntosh—1, Kickapoo; 2, Bassett; 3, Sherman. McMahan—No first; 2, Irish. Newell—1, Kickapoo; 2, Irish; 3, Baer. Northern Spy—1, Lounsbury. Northwestern Greening—1, Harris; 2, Bassetet; 3, Kickapoo. Pewaukee—1, Bassett; 2, Sherman; 3, Lounsbury. Plum Cider—1, Lounsbury. Seek-No-Further—1, Shepard; 2, Lounsbury; 3, Bassett. Scott—1, Kickapoo; 2, Harris; 3, Irish. Talman—1, Baer; 2, Bassett; 3, Shepard. Wealthy—1, Kickapoo; 2, Baer; 3, Irish. Wolf River—1, Baer; 2, Rasmussen; 3, Bassett. York Imperial—1, Bassett; 2, Sherman.

Best five trays of the following:

McIntosh—1, Kickapoo Development Company. Northwestern Greening—1, Kickapoo; 2, Baer; 3, Bassett. Wealthy—1, Kickapoo. Tolman—1, Baer; 2, Kickapoo. Fameuse—1, Baer.

A display of vegetables was also made, but it was not extensive and did not reflect the real merit of the fresh stocks at the time of harvesting. January is a poor time at best to hold a horticultural exhibition and the cellar-stored fruit stood the test remarkably well. Cranberry interests were represented by a contingent of well-known growers from the Cranmoor and Grand Rapids region. C. M. Secker, Tomah, was in charge. He said the 1918 crop fell short of normal, but that the sugar shortage which was feared by many did not hinder the use of cranberries after all. This was due to a big advertising campaign put on by the American Cranberry Exchange, in which salt was advocated in tried recipes for bringing out the flavor of the berries. This made the use of sugar less necessary. The leading varieties shown at the exhibition last week were Searles' Jumbo, Prolific, Bennet's Jumbo and McFarlin. The Wisconsin growers are learning the virtue of close cooperation in handling their supplies and in marketing fruit. Notable contributions to the practical discussions were made by the following men: J. F. Hauser, Bayfield, on tomato culture; J. W. Roe, Oshkosh, on Wisconsin as a rare field for the market gardener and special crop farmer; T. H. Kiethly, Illinois, on pruning and spraying small fruits, with special emphasis on trimming raspberries and blackberries; W. R. Williams, Packwaukee, who told of his remarkable success with everbearing strawberries of the Progressive variety; Irving Smith, Ashland, on the chances a young man has for success in market gardening. R. E. Vaughan, H. F. Wilson and R. H. Roberts, of the university staff, spoke to the growers on plant diseases, insect control and proper pruning methods. S. B Fracker, state entomologist, and N. E. France, apiary inspector, also addressed the convention, the former speaking on the relation of the fruit grower and nurseryman to the gain rust campaign and the latter telling of the partnership which exists between bees and fruit growers. On the whole, the convention was well rounded out and reached a high standard both in exhibits and discussions. The annual deliberations of the society are bound each year in book form and a copy is sent to every member.

Petsai—A Supplement of Head Lettuce.

Petsai is a supplement of lettuce recommended by the Department of Agriculture, not a substitute for it.

Petsai can be grown throughout the whole country and at about half the expense of lettuce.

(A) Heart of Lettuce.

It keeps better than lettuce, and pound for pound, probably contains as much of the valuable substance for which we eat lettuce.

In transit it "holds up" better than lettuce.

Petsai is one of the staple ingredients of chop suey, a dish that thousands of Americans have eaten and liked.

Technically petsai is not a cabbage and the unfortunate use of the name Chinese cabbage should not create prejudice against it.

As a garnish it is preferable to lettuce; it retains its crispness in flavor as well as in appearance.

Petsai is grown from seed, just as lettuce is grown. It attains the height of 12 to 14 inches and when ready to serve it resembles the heart of lettuce.

Apply to your seedman for seed.

The poet who said, "What's in a name?" evidently had no idea that, insofar as the important matter of food is concerned, prejudice could be aroused to such a point as to cause a mental aversion to, if not a positive condemnation of, a really delectable article of diet. Take the case of the Chinese cabbage, for example. Instinctively the gourmet shudders at the attempt to associate that name with a delicacy. Call it petsai—the Chinese name for it—and most probably his prejudice will change to desire; he will try it, like it.

Petsai was introduced by the United States Department of Agriculture from China. It is now grown in considerable quantities in Illinois, New Jersey, California, and other sections.

The testimony of unprejudiced people who have eaten petsai is all in its favor, and many who have eaten chop suey and liked it, not knowing of what it is composed, unwittingly have held a brief for petsai, one of the staple ingredients of that well-known and much-enjoyed Chinese-American dish.

(B) Petsai.

To Americans lettuce has become the great leaf vegetable for salads. Throughout the year it is grown in some part or other of the country and shipped from great distances to our tables. It is grown under square miles of glass near the great cities and at a considerable expense for coal. It is estimated that 40,200 tons of lettuce is grown under glass every year and that the value of this product is $9,648,000.

Petsai can be grown throughout the whole United States. It possesses not only all the good food qualities of lettuce but also it has the advantage of being more economically grown—about one-half the cost of lettuce—by reason of its heavier yield. This feature alone should recommend it.

The illustrations show the two vegetables, in a state of equal freshness, ready to serve as salad. It will be observed by comparison that A, heart of lettuce, does not stand up as crisply nor as firmly as B, the Petsai; nor does the former have the inviting and appetizing appearance clearly noticeable in the latter.

Nurserymen Meet.

The second annual convention of the Wisconsin Nurserymen's Association was held in Madison Jan. 9th. No program of papers or discussions was prepared in advance and the members merely discussed the different phases of the business of greatest interest to them.

Officers for the ensuing year were elected as follows: President, T. J. Ferguson, of the Hawks Nursery Co.; Secretary-Treasurer, L. J. Tucker, of the McKay Nursery Co.

About a dozen firms are members, membership being confined to firms which employ agents.

Straw or wild hay may still be spread over the strawberry bed to advantage, especially if it is not covered with snow.

A Well Balanced Program.

William Toole, Sr.

A few days before the annual meeting of the State Horticultural Society a friend from another state, after looking over the program in Wisconsin Horticulture, remarked, "Well, I call that a pretty good program. I should like to be there." I looked it over more closely and felt that it gave reason for pleasant anticipations. When we get together we certainly entered into the spirit of the occasion, and broad fields were well tilled with discussion.

To some of our visitors from other states the very general participation in the discussions seemed in contrast to what they had been accustomed. At the close of each session, remarks of those participating were frequent in expression of appreciation of the excellence of the meetings. In only one respect did I hear complaint, and that was some of the fruit men complaining on Friday forenoon that apples had been neglected. Certainly the orchard and kindred interests received full attention at the Friday afternoon meeting. Those who were in haste to go home before the close of the meeting certainly missed something worth while.

The whole field of the activities covered by our State Horticultural Society is broad, and all of the interests cannot be fully considered at any one meeting. The field of ornamental horticulture is extensive, and who shall say that the beautifying of our homes, our parks and drives is not of prime importance? More than ever we realize the importance of the home and market gardens. The recent scarcity in our markets impresses us with the value of our small fruits. If for once the orchard is not made more prominent than all other interests, it is but fair that there should be a balance struck occasionally. We have our Wisconsin Horticulture as a field of horticultural extension and I think our editor would welcome questions and opinions. If anything of vital importance has been overlooked, then prompt us through our magazine. We never received greater encouragement to go ahead in apple growing than that given us on Friday afternoon. There never was a time when there was more good reason than now, that we should strive for a crop of perfect apples this season.

THE PROMISED LAND

Continued from page 71

their wagon-box in two Each took a yoke of cattle and half the cash and provisions. No court, no judge, no jury, no lawyer to pay, no alimony—an easy way of divorce

Aug. 24, drove 19 miles. There was no grass, so we went out with the oxen for five miles for grass, keeping a guard. Indians are giving trouble stampeding cattle. Met fifteen wagons from California going to the United States. We bathed in the hot springs and made hay for our trip over the desert. We were now 1,648 miles out. Took the wrong road, as it proved the Truckie route was best. After one day's drive over the desert we rested days and drove nights. Caught water at one spring, one quart in two minutes for ten cattle for four hours. Desert 90 miles. No good water or grass. Any men or cattle drinking the alkali water died. On the desert we passed a red-hot mountain.

Sept. 11. Good grass and water. Saw the Sierra Nevada mountains—1,902 miles out. Turner boys lost 21 head of cattle. Six men who followed the trail were never heard from. One was Mr. Craig, of Illinois, and another was John McGrath, who attended my school in Illinois. We sometimes drive till 9 o'clock and sometimes till midnight to find camp.

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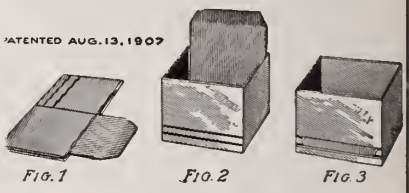

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Cumberland Fruit Package Company
Dept. D, Cumberland, Wis.

Sept. 1. It took 15 yoke of oxen to draw one half loaded wagon up the mountain and we cut and chained tree tops to the wagons to let thew down. We came to a river and saw many beaver dams and Indian fish traps. Passed through Canyon walls 400 feet high and crossed the river sixteen times.

Sept. 29. Good spring, but no grass. Slept out with cattle, miles off the trail.

Oct. 5. Ice two inches thick; cattle frozen down.

Oct. 7. Went to Big Meadows on Sunday and heard my Uncle Whitcomb preach. Still throwing away everything to lighten wagons. We see many men on foot who have lost everything. Snow three inches deep. Drinking water sold at fifty cents a drink. In climbing a big hill one ox dropped dead in the yoke.

Oct. 18. Arrived at Lawson's on Sacramento river in California, having traveled 2,066 miles from Omaha, averaging a little over fourteen miles a day during 147 days, and 2,416 miles from starting point in Illinois. Time, 197 days. Average for the whole trip, twelve and one quarter miles per day.

We cut up one ox-yoke in Iowa for wood and on the plains when we could not get sage brush, we used Buffalo chips to bake our bread.

I have a diary of my entire trip—weather notes, storms, record of newly made graves by the trail, many from cholera, some killed by Indians, some shot by accident. One man shot his partner, supposing him an Indian.

This paper is devoid of fun. There was no fun driving five yokes of oxen all day and taking them off the trail five miles for grass, and sleep on the cold, cold ground, watching all the time for your scalp. There was more fun and profit in the next three years digging gold.

Truck Farming on Ten Acres.

J. W. Roe.

I am asked to make some suggestions as to what a young man should grow, starting on a tract of ten acres which is to be devoted to vegetables and fruit. I imagine our secretary means for me to talk about making a home and a living from a tract of ten acres.

This is being done by thousands throughout the country. Wisconsin offers as great inducements to the truck gardener and small fruit grower as any of the states. I am satisfied that Wisconsin offers a safer bet for the small truckers than does Florida, Texas, California or any of the much advertised and alluring green pastures of the south and west.

Here, should the main crops fail, a catch crop of some kind will go far toward keeping the wolf from the door. A market is near by and will take anything from a dozen of eggs to a bunch of green onions.

The young man who is going to

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

take up Horticulture with the object of making a living for himself and family must have a lot of work in him, must use his brains, and, above all, must have a natural liking for growing things. Wisconsin has much to offer to the horticulturist in the way of variety. Its changing seasons and abundant rainfalls have covered its surface with a verdure pleasing to the eye. "A land that will clothe itself will clothe man." So the young man need not be afraid to trust to Wisconsin soil. If he is going to make a success of such a venture he should be a lover of nature. However, not all lovers of nature make successful truck growers. There are those who see the mountains, the sky, the mirrored lakes and streams, the forests and woodlots, but whose perspective is so broad they fail to see the little things close by. There are those who see the individuality of plant life and study to learn their habits and to make use of such plants as man may require. They study ways and means to perfect a plant or a fruit so that it will become a source of gain to humanity. This is practical horticulture.

The beginner should have some practical knowledge of horticulture unless he has money to hire some one to guide him over the rough places. In either case I would advise going in gradually, letting his operations be guided, in extent, somewhat by his knowledge of the business.

There are so many conditions entering into this proposition that to lay down a line of action without taking under consideration any especial case might lead to disastrous consequences if followed blindly. So if I can be of any practical use in the short time allotted me I must deal out some general observations and let the young man, starting in on this home building, figure out his own salvation. The location of the land would decide to some extent what crops best to be cultivated. For instance, if it is near a large city, general truck gardening in connection with hot beds, winter storage, and possibly greenhouses would probably pay better than other lines.

Where the distance from town is greater specialized crops are handled to better advantage as marketing can be done at one time. Much depends on the character of the soil to decide what crops can be grown to advantage. If the soil lies high and is of heavy clay, onions or celery would be unlikely crops to raise, nor would melons do well on such soil. It would be better to go in for berries and some tree fruit than to attempt vegetable gardening. However, at least one half of the ten acre tract should be kept in field crops to furnish feed for the domestic animals; namely, two cows, a team of horses, some chickens and a brood sow. You may ask, Why all the live stock? The land will need all the fertilizer that can be produced at home.

Intensive cropping takes the fertility from the soil rapidly. This, of course, has to be returned. Then the supply of milk, cream and butter, furnished by the cows, together with the meat raised on the skim milk, furnish the family with a considerable part of their food. Possibly gasoline power could be substituted for the team of horses and cows might be added in their place. Pigs and chickens eat up the waste and are quite a necessary adjunct.

Another reason for keeping part of the land in growing field crops, such as clover, alfalfa, peas, etc., is that these crops bring nitrogen into the soil and also humus. At the same time they are resting the land with rotation of crops. Rotation of this kind is

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High-Grade Field Seeds, showing purity and germination tests. Mention those interested in.

L. L. OLDS SEED CO. Drawer P 61 MADISON, WIS.

necessary to such crops as strawberries, tomatoes, potatoes, corn, etc.

In regard to specializing on certain crops I have found, through observation, that those who are doing this are, as a rule, getting ahead. It seems that more expert efforts are likely to be exercised on a specialized crop than can be handed to a haphazard garden. It is much like a department store compared with a straight one-lined place of business. The man running a department store must be a wizard to hold up the many lines to the standard of a one-lined store. Generally men are not wizards.

The question of selecting lines on which to specialize depends on the soil, climate, market and the available labor supply. Owing to the perversity of our growing season, no man can figure on a sure thing. However, there are at least two kinds of summers to bank on—the hot and dry and the cool and wet seasons. Figuring on either a hot, dry or a cool season, some of our best growers try to play a sure game and bet both ways. In other words, they specialize on two kinds of crops, one requiring cool weather and the other requiring a hot summer. In doing this one crop ought to be a winner, while the other may not lose out altogether.

To illustrate the crops I mean that require a cool season I will name some of them—cauliflower, celery, cabbage, peas, root crops and grains, cucumbers and potatoes. On the other hand, tomatoes, onions, melons, corn, beans, peppers and egg plant thrive in hot weather. Too little moisture sometimes shortens the crop, but it seldom happens in Wisconsin that total failure comes through drought. But we are likely to have periods of excessive wet, when, if it were not for drainage, a total loss may ensue. Consequently the problem of drainage enters into the question of how much to plant. I believe it is unsafe to put much into intensive cultivation unless the soil is tiled.

In regard to the cultivation of fruit I would confine the growing of fruit to small fruit. For all kinds of soils strawberries and red raspberries are usually the safest crops. Currants and gooseberries come in all right unless local home gardens have created an overproduction. Black caps and blackberries are partial to light soils and are more or less unreliable. As to fruit trees, I believe a ten-acre farm is too small to attempt much in that line and would advise planting for home use only.

Some of our truck gardeners are specializing in onions and cabbage, others in tomatoes and cucumbers, or muskmelons and cauliflower. Usually an acre of strawberries is added. They seldom confine themselves to certain

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crops; but generally it is better to have some specialty.

To illustrate as to the proportion of land allotted to the different crops that a truck gardener, sending a wagon to the city frequently, might consider, I will give the following outline:

Asparagus bed, permanently located, one-half acre.

Early leaf letture, spinach, head lettuce, early beets, carrots and set onions, one-half acre.

This land to be used again for celery, head lettuce, spinach and winter radishes.

Dwarf green peas and early wax beans, planted in drills, one acre. This land to be planted to early bantam sweet corn and pie pumpkins as soon as the peas and beans show their second leaves. The peas and beans will get out of the way of the corn and will help the corn if anything by drawing nitrogen to the soil.

Black seed onions, one-half acre.

Beets, carrots and parsnips, one-half acre.

Cow beets for stock and chickens, one-fourth acre.

Peppers, cauliflower and egg plant, one-fourth acre.

Muskmelons and cucumbers, one-half acre.

Tomatoes, cabbage, early and late, berries, each one-half acre.

The tomato, melon and cucumber and late cabbage land to be seeded broad cast to early round red radishes and also to cabbage seed for plants. The radishes divided in three sowings, a week apart. Early cabbage ground to be followed with spinach and leaf lettuce. Round radishes to be seeded any time a space is available up to the middle of September.

One-half acre of strawberries to be set out each spring and old patch plowed under after picking. This ground to be seeded to late table beets, turnips and spinach.

Vegetable and flowering plants and hardy perennial plants are often included in the gardener's list of marketable crops.

The hot beds are to be used both in the spring and fall for forcing lettuce, radishes, etc.

The stover from the peas, beans and sweet corn will furnish stock feed, consequently some of the grass land will not be needed so much for hay, but can be put under cultivation, and more fruit and potatoes may be raised; also a few rows of Hubbard squash. The soil should be tile-drained and be of a loose texture so that it may be worked at any time.

A Florida real estate man was bragging how they start picking strawberries down there at Christmas time, and in three months gather five hundred dollars worth of berries from an acre. A quick answer from a Wisconsin man came, "Why, we can get that much off an acre of berries in three weeks and have two months to go fishing on you fellows if we want to."

We will welcome into the good fellowship of the Horticultural Society any one who wishes to join our ranks. It does not make any difference where you go or what you grow, there are the long hours, the close figuring and an element of chance to contend with. "Our life is a compromise sometimes fair, sometimes overcast; tempestuous and serene. As in a rose, flowers and prickles. A temperate summer sometimes, a hard winter, a drouth, and then again pleasant showers. So is our life intermixed with joy, hopes and fears."

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, February, 1919 | Number 6

SUPPLEMENT TO REGULAR EDITION

HELPFUL HINTS

FOR

THE BEGINNER

IN

GARDENING and FRUIT GROWING

Supplement to No. 6, Vol. 9, February, 1919

Wisconsin Horticulture

(Apply to Chairman of Your City Garden Committee for Free Copy)

This guide to operations in garden and orchard consists of a reprint of the seven "War Garden" circulars issued jointly by this Society and the Extension Division of the College of Agriculture in 1918 with the addition of three similar circulars on fruit growing.

In preparing this series the writers have aimed at the greatest brevity and simplicity consistent with accuracy. They are not intended for the EXPERIENCED gardener but for the BEGINNER.

Bulletins issued by the College of Agriculture, Madison, and the Department of Agriculture, Washington, D. C., the Annual Report of this Society, as well as books on fruit growing, should be consulted if fruit growing for market is contemplated.

ASK QUESTIONS

Answers to questions relating to the culture of fruits, flowers or vegetables will be furnished by the Secretary, State Horticultural Society, Madison, Wisconsin, without charge.

SUPPLEMENT
Wisconsin Horticulture

Volume IX | Madison, Wisconsin, February, 1919 | Number 6

PLANT A VICTORY GARDEN

In 1917 and again in 1918 we planted and tended our "war gardens" and by so doing helped in no small measure to win the war. The war is over but gardening is just as good a game as ever.

Very many people in 1917 and 1918 learned what a few always knew, that there is much more to gardening than a reduction in the cost of living. To the indoor worker there is health-giving exercise and the joy of being out of doors; to everyone, rich and poor, young and old, the pleasure of digging in the soil, of planting the seed, of watching the plants grow. It's an inspiration, Creation unfolded before our eyes.

So let us garden this year and each succeeding year for gardening sake.

GETTING READY FOR THE GARDEN

Prof. James G. Moore, College of Agriculture, Univ. of Wis.

Most folks think February a poor gardening month but the fact is that the work done in February and March may largely determine the success of the garden. It is time now to begin to make definite plans for the garden work which is to be done later on. The planting season will be here before we know it.

Don't waste your effort next summer in gardening in competition with trees and shade. It can't be done successfully. Hoeing, watering and fertilizing cannot make up for lack of sunlight. Many gardeners try to make this substitution and fail. Good garden tracts may be spoiled by worthless, often self-planted, trees or shrubs. Cut them out so your vegetables will not have to compete with them for sunlight, food, and water. You will probably find, also, that your back yard looks better without them.

If it is impractical to remove the offending plants, or if buildings shade your garden for the greater part of the day begin at once to make arrangements for a suitable garden tract. Ask the aid of the local organization which is helping to get gardeners and the garden tracts together.

That Garden Plan

What kind of a house would a carpenter build without a plan? How would a garden which was planned, row by row, while the planting was being done compare with one carefully planned in advance of planting? The professional gardener finds a plan necessary for best results. A definite plan is of even more importance for the small garden if the best results are to be secured. Haphazard, hit-or-miss garden planting usually results in poor use of the soil and lessened production. A good plan saves much valuable time at planting because the gardener doesn't have to stand around and figure out where things are to go.

As soon as you know where your garden is to be, measure your tract and then plan your garden on paper. A good working plan should show:

1. Location of the different crops.
2. Distances between rows.
3. If more than one crop is to occupy the same area during the season.
4. Approximate dates for making different plantings of lettuce, peas, radishes or other vegetables of which more than one planting is made.

Use heavy paper and ink so that your plan will stand a season's use in the garden.

It is well to use a definite and fairly large scale in showing distance between rows. For a small garden one-fourth or one-half inch on the plan to every foot in the garden is a convenient scale. The more carefully your plan is made the greater will be the returns from your garden.

In making a garden there are certain things to remember.

1. **Make every foot of land work all** would a garden which was planned, row by row, while the planting was **the time.** As soon as one crop is harvested another should take its place if there is room for its proper growth. Practically all of the garden should grow two crops and part of it ought to produce three. Warm season crops such as beans and tomatoes, and late seeded crops like turnips may follow early cool season crops such as lettuce, spinach, radishes and onion sets.
2. **Vegetables which can be stored for winter use should be considered first.** The vegetables will be more appreciated when the supply is low and the price is high.
3. **First plan for the long season crops—the short season crops will take care of themselves.** Grow short season crops (lettuce, radishes, spinach) between the rows of long season crops. Globe radishes may be grown in the rows of carrots,

parsnips and beets. Small, early-maturing vegetables can be grown between the young plants of cabbage, tomatoes, or corn in hills.

4. **If your garden is small you cannot afford to grow crops requiring lots of space.** Potatoes, corn, and vine crops should usually be left out of the small garden. If these are grown the smaller, quick-growing crops should occupy the space until it is needed by the permanent crop.
5. **Foliage crops (lettuce, spinach) are likely to do better in partial shade than the fruit crops (tomatoes, beans).**
6. **Do not plant high-growing plants (corn, tomatoes to be staked) Where they will shade sun-loving plants.** The difficulties arising from shading can be greatly lessened by having the rows run north and south.
7. **Unless you have had previous experience do not waste much time on cauliflower, peppers, egg plant or other crops that are hard to grow or of doubtful value.** These crops so often fail due to weather conditions or slight errors in culture that it is usually advisable to give their space to more certain crops.
8. **Remember that in a small garden there is plenty of space "up and down" but it is limited sidewise.** Tomatoes should be trained to trellises or stakes. Tall growing peas trellised and planted between rows of smaller vegetables require no more space than dwarf varieties and usually produce larger crops. If you think you must grow cucumbers try the trellis method.
9. **"Variety is the spice of life."** Provide for as large a variety of vegetables as practical. You might get tired of a steady diet of one kind.
10. **Leave sufficient space between the rows to provide for good tillage.** It is better to have slightly too much than too little space. The beginner will need a wider space between the rows than the experienced gardener. Be on the safe side.

Space Needed for Various Vegetables

The distance between the rows will vary with the method of cultivation, the size of the variety, and the fertility of the soil. The distances given below are for hand or wheel-hoe cultivation and average fertile soil.

8– 9 inches—Peas when planted in double rows.
9–12 inches—Radish.
12 inches—Cress.
12–15 inches—Beets, carrots, lettuce, onion, spinach.
15–18 inches—Bush beans, endive, parsley, rutabaga, salsify, turnip.
18–20 inches—Parsnips, pepper.
18–24 inches—Cabbage (early), chard, kohlrabi.
24–30 inches—Cabbage (late), peas, tomatoes (staked).
30–36 inches — Egg-plant, potatoes, sweet corn.
30–48 inches—Celery (depends largely on method of blanching).
42–48 inches—Squash (bush), tomatoes (unstaked).
4– 6 feet—Cucumber.
5– 6 feet—Muskmelon.
7– 9 feet—Squash (running).
8–10 feet—Pumpkin.

When vegetables of different kinds are planted in adjoining rows the distance between the rows should be approximately one-half of the total distance allowed for the crops. For example, if celery, for which is allowed 4 feet between rows, and cabbage, for which a distance of 2 feet is allowed, occupy adjoining rows the distance between the rows should be about 3 feet.

Time Crops Occupy Land

The length of time between starting the crop in the garden and that at which it is ready to use and the time it will occupy the land are important factors in garden planning. Seasonal conditions and the variety will greatly modify the time required for vegetables to be ready for use.

The following list shows the average time needed to grow the different vegetables. In planning for crops to follow early vegetables or which will occupy the space used by an early crop, add to the time given in the table below the probable length of time required to use the early crop or the length of time required for it to become unfit for use.

The dates given are the approximate dates of planting at Madison. For the central part of the state the dates would be from 10 to 12 days later, and for upper Wisconsin 18 to 20 days later.

In the table which follows, * placed before the name of a crop indicates that other plantings may be made; ** indicates that the crop occupies the land until the end of the season. In case of * * * other plantings may be made as the crop is used, but the winter crop occupies the land until the end of the season. Early cabbage will occupy the land until August 15 or later.

Crop	Approximate date of planting at Madison	Ready for use (weeks)
* Bean (bush) snap.	May 10–15	7 to 8
** Bean (bush) dry	May 10–15	.....
** Bean (pole)	May 10–15	8 to 9
*** Beets	April 15–20	8 to 9
Cabbage (early, plants)	April 25–30	12 to 13
** Cabbage (late, plants)	June 25	.....
*** Carrots	April 15–20	9 to 11
** Celery (plants)	June 20	7 to 8
* Corn (early)	May 5–10	9 to 10
** Corn (late)	May 15, June 10	.....
Cress	April 15–20	4 to 5
** Cucumber	May 15–20	.....
** Egg plant	June 5–10	.....
*** Kohlrabi	April 20–25	9 to 10
* Lettuce (seed)	April 15–20	6 to 8
* Lettuce (plants)	April 20	4 to 6
** Muskmelon	June 1 (set out plants started under glass)	.....
** Onions (seed)	April 15–20	.....
** Onions (sets)	April 15–20	9 to 10
* Parsley	April 15–20	12 to 14
** Parsnip	April 15–20	.....
* Peas	April 15–20	8 to 10
** Peppers	June 5–10	.....
Potato (early)	May 1–5	10 to 12
** Potato (late)	June 1–10	.....
** Pumpkin	May 15–20	.....
* Radish	April 15–20	4 to 6
** Radish (winter)	July 15	.....
** Rutabaga	July 1	.....
** Salsify	April 15–20	.....
* Spinach	April 10–15	4 to 6
** Squash (bush)	May 15–20	.....
** Squash (runner)	May 15–20	.....
** Tomato (plants)	May 15–20	.....
Turnips (spring)	April 15–20	8 to 10
** Turnips (late)	July 20	.....

HINTS FOR THE HOME GARDENER

Frederic Cranefield.

The beginner in gardening is apt to attempt too much. **A small garden well tilled is better than a larger one neglected.**

Amateur, home, or so called "victory" gardens may be divided into two classes; the small back lot gardens ranging in size from 6 x 10 feet to those of as many yards, and the gardens of the more ambitious amateurs occupying an entire lot or even more.

To Plant or Not to Plant

In the small garden confine the list to kinds requiring but little room such as:

Bean, beet, cabbage, carrot, lettuce, onion, parsnips, pea, radish, spinach and tomato. Not much more should be attempted except that late turnips or rutabagas may be grown as succession crops.

These demand Much Elbow Room— Sweet corn, cucumber, squash and pumpkin require much room and with potatoes should be attempted only where plenty of land is available.

These Are Too Fancy— Brussels sprouts, cauliflower, celery, endive, egg plant, peppers and lima beans are kinds that require rather more skill to

grow than the average amateur is apt to possess and should not be included in the beginners' list.

Soil conditions and the taste of the gardener are factors that should be considered.

The beginner is usually very ambitious and is apt to try everything named in the catalog. The old-timer confines his efforts to a few kinds, the ones most in demand in the kitchen.

The "Best" Varieties

Ask each of a dozen expert gardeners to make a list of "best" varieties and the result will be a dozen different lists, for each has his favorites, but on discussion it will usually be found that their distinctions are too slight to be considered seriously. All the important garden vegetables are classified by the expert as to types such as the round radishes and the long radishes, round beets and flat beets, etc. Each seedsman has varieties which he exploits as the "best" of these types.

The following lists may not include the best kinds in the opinion of many expert gardeners but all as standard, reliable and thoroughly tested and at least plenty good enough for anybody:

Bean: Dwarf; Refuge wax; Refugee 1000 to 1 (green pod). **Pole or climbing**: Cranberry or Horticultural; Kentucky Wonder. The last two varieties are climbing or pole beans and are recommended where space is very limited. The Cranberry a climbing or pole variety, is very prolific and, partly matured beans shelled are as good as Lima Beans.

Beet: Detroit dark red or Crosby's Egyptian. The first named is round, the second, flat or turnip shaped.

Cabbage:. For early cabbage Charleston Wakefield, for late Danish ball head.

Carrot:. Chantenay: this is a half-long carrot and better adapted to home gardens either for summer use or cellar storage than the Oxheart or other large types.

Kohl Rabi: White Vienna.

Lettuce:. For early "leaf" lettuce either Curled Simpson or Grand Rapids. The Grand Rapids is rather better in quality than the Simpson but does not grow as rapidly nor stand as much hardship. The Grand Rapids is ideal for hot-bed culture.

For head lettuce plant only May King.

Onion: Yellow Globe Danvers or Southport Red Globe.

Parsnip: Hollow Crown.

Pea: **Laxtonian**: This is one of the best of the large podded, early dwarf peas and may be sown in succession. For a late maturing variety plant Champion of England or Telephone. The latter are tall growing kinds and require support.

Radish: Early scarlet globe or any early round or turnip shaped variety sown in succession. For a later variety Crimson Giant; does not get "pithy" in hot weather.

Rutabaga: American Purple Top.

Spinach: Bloomsdale Savoy.

Tomato: Chalk's Early Jewel; Ponderosa; Late Stone.

Turnip: Purple Top White Globe: the Yellow Globe is a large late maturing yellow flesh variety, closely resembling rutabaga and of better quality.

Plants or Sets

For early onions plant onion sets. For early cabbage and tomato buy plants; plants for late cabbage may be easily grown in the garden; plant a packet of seed at the time of sowing early vegetables.

For the Gardener Who Has Plenty of Room and Time

Cauliflower: Early Snow Ball.

Celery. White Plume.

Cucumber: Improved Long Green.

Sweet Corn: Golden Bantam.

Egg Plant: Black Beauty.

Lima Beans: Burpee's Bush Lima, or Henderson's Bush Lima.

Muskmelon: Milwaukee Market.

Parsley: Champion Moss Curled; (Six plants enough).

Peppers: Crimson Giant (sweet).

How to Buy

Buy seeds only from reliable seedsmen. They advertise in reliable papers. Avoid "bargains" in seeds, the best is the cheapest. The cost of seed is not a big item considering the returns. Penny packets and department store bargains are to be avoided. "Seed Tape" is expensive and of doubtful value.

Quantity of Seed Required

The problem of how much seed to buy is one beset with many difficulties and not easily solved.

If we were certain that every seed we buy would germinate and produce a vigorous plant under the adverse conditions of soil and climate commonly encountered, we would need to buy but very little seed.

Carrots, for instance should be spaced at least two inches apart in the row for best results. A package of carrot seeds contains about 5000 seeds which spaced at two inches would be enough to plant over 800 feet of row. In practice an average packet is enough to plant a little less than 40 feet of row. Why use so much seed? Firstly, because not all seeds will germinate and as all the poor seeds may fall in one place we must allow enough to insure a good stand.

Secondly: conditions in the garden are never perfect for germination and growth and many of the plants perish before reaching daylight.

Thirdly: Seeds must be covered with earth, which is a dead weight that must be lifted by the plantlets. We must, therefore, plant seeds enough to afford lifting power to break the surface crust.

Fewer seeds are required when sowing later in the season than for earlier sowings, as the ground is then more mellow and seeds come up easier.

As amateur gardeners are interested only in small areas, ounces and quarts may be left out of consideration and attention directed mainly to packets of seed. In order to learn something of the actual size or contents of "packets" offered by reliable seedsmen 31 packets of seed were purchased from four seed firms and the seeds in each counted. The results follow:

Seedsman	Onion	Carrot	Beet	Bean	Pea	Radish	Spinach	Parsnip
A	1210	5427	335	156	257	1032	777	1126
B	1016	.....	500	265	394	1408	990	850
C	910	3720	356	258	340	1108	440	700
D	1690	.....	585	94	169	790	782	1892
Av	1206+	5473+	444	193+	290	1084+	747+	1142

Combining these figures with the experience of skilled gardeners as to the proper number of seeds to plant per inch or foot, one packet of onion seed will plant 10 feet of row, carrot 40 feet, beet 29 feet, bean 20 feet, pea 25 feet, radish 10 feet.

Summing up it may be said that for the average family garden one packet of seed is enough of any of the kinds named except possibly peas and beans. By careful sowing one packet of most of the vegetables named is more than enough for the first planting and some may be saved for later planting.

EARLY PLANTS

Prof. James G. Moore, College of Agriculture, Univ. of Wis.

It is possible to have a garden without starting part of it indoors, but it is usually more expensive or less satisfactory.

Of course if you are absolutely sure you are going to be able to buy good plants of the kinds you want, when you want them, then it may be best to let someone else grow them. But be very sure you won't be disappointed. Although it takes some work and space to grow good plants for setting out for early vegetables, the difficulties of growing them are often greatly magnified.

Lettuce, chard, cabbage, and kohlrabi can be easily matured if planted in the garden after conditions have become favorable for their growth, but they may be had much earlier if started indoors or under glass. It is almost essential to start tomatoes, peppers, egg plant, and celery in this way if their production is to be such as to make it worth while to bother with them.

Methods of Growing Early Vegetables

Three methods are commonly used in producing plants for setting in the garden: hotbeds, cold-frames and window boxes. The difficulty of securing the proper material for heating the hotbed, and the attention necessary to operate it successfully, make it of questionable value to the man with a small garden or to the beginner.

Many city lot gardeners find the cold-frame more satisfactory. While plants cannot be secured quite so early as with the hotbed the cold-frame requires less attention and there is less danger of injury to the plants because of changing temperatures. It can be constructed without much expense by using storm sash. In addition to the plants for setting out, such crops as lettuce and radishes may be grown in it.

The backyard gardener will usually find that starting the plants indoors is the plan best adapted to his conditions. Comparatively little space will be required to start enough plants for the first crop of lettuce, early cabbage and tomatoes.

Provide Good Soil. Where no provision was made last fall the question of the soil will be the most troublesome. You may be able to secure it from a greenhouse. If not resort to your own garden. Get the snow off a small area so as to encourage thawing. Some warm day in early March get your soil. If it is still frozen get it anyway, and let it thaw out indoors. If possible, secure a little sand to mix with it and to serve as a top layer in the seed box. Before attempting to start your seed box let the soil warm up and dry until it does not pack in a hard lump when squeezed in the hand.

Shallow Seed Box. A shallow box is most satisfactory for starting the plants. Suitable ones can usually be secured at a grocery store. Cigar boxes 2¼ or 2½ inches deep are convenient, but somewhat deeper boxes are more desirable. Three or four will be sufficient to provide all the lettuce, cabbage, and tomatoes used in the average garden. If the box has a tight bottom make a few small holes in this to provide drainage.

Filling the Seed Box. Slightly more than enough soil to fill the box should be put in loosely and the surplus scraped off with a stick. This will leave the top smooth and level. Press the soil down, preferably using a small piece of board, being careful to leave the surface level. After it is pressed down, the top of the soil should be from one-fourth to one-half inch below the top of the box. If sand is to be had a better stand of plants will usually be secured if the last one-half inch of soil put into the box is sand. In this layer the seed may be sown.

Sowing the Seeds. With the finger or a dull pointed stick make a shallow trench about one-fourth of an inch deep, preferably crosswise of the box. Using the packet or thumb and forefinger, scatter the seed in the trench. The thickness of sowing the seed depends largely on its germination capacity. Do not sow too thickly as there is then more danger of the young plants rotting off. On the other hand, seeding should be thick enough to give a good stand. If the plants are too thick they should be thinned soon after they come above the surface. Press the seeds gently into the soil and cover them with a thin layer of soil. The distance between the rows depends somewhat on how long the plants are to be left before transplanting. Distances from 1¼ to 2 inches are usual and convenient.

Watering the Seeds. After sowing, water the seed box well, being careful not to wash the seed ,particularly if different varieties are to be grown in the same box. Enough water should be put on to moisten the whole body of soil in the box but not enough to cause it to become muddy.

One of the objections often raised to growing early plants indoors is the damage resulting to furniture and rugs from watering. This can be overcome by setting the seed boxes in the sink or some other receptacle until all excess water has drained off. Then if the boxes are set on oilcloth or heavy paper no damage should occur.

Now cover the seed box with a pane of glass or other cover, which will prevent the loss of moisture and set the box in a warm place. As soon as the young plants break the soil, remove the cover. If it is left on, the plants have a tendency to become spindly or "leggy," and are likely to rot off.

Care of Young Plants. The young plants will need careful attention as regards proper light, heat and water. Keep the seed box where it will get abundant light. Insufficient light results in spindly plants. It is better to have the temperature a little low than too high. High temperatures mean soft, spongy plants which are less likely to give good results when set out.

How to Water. More people fail in watering than in any other way. Some choke the plants, others drown them. Choking usually comes from applying small amounts at rather frequent intervals. Not enough water is applied to moisten the bottom soil, and the top is kept too wet, which encourages disease.

Drowning is less frequent, especially if the seed box is provided with drainage openings. Water applied frequently in large amounts excludes air from the soil and the plants smother.

Proper watering consists in putting on enough water to moisten all the soil in the box and then waiting until the surface of the soil begins to appear lighter in color before making another application.

Giving the Seedlings Room. The young plants will soon begin to crowd each other and unless given more room will become long-stemmed or "leggy." To make good plants for setting out they must be either thinned or transplanted. The latter is the more common method. A box 12 inches square will hold 36 plants set 2 by 2 inches, or 64 when planted 1½ by 1½ inches. Four boxes of this size, one for tomatoes, peppers and egg plants (if either of the latter are grown), one for lettuce, one for cabbage and cauliflower, and one for celery would meet the demands of the average gardener. The celery may be planted 1 by 1 inch, lettuce, cabbage and cauliflower 1½ by 1½ inch, and tomatoes, egg plants and peppers 2 by 2 inches. The same general care should be given the plants after transplanting as when they were in the seed box. For two or three days after transplanting it is well not to give so high a temperature nor so full light as before transplanting.

Hardening-Off. Many have success in growing plants indoors but lose a large portion of them in setting into

the garden. Any one of a number of things may be responsible for such loses. One of the common ones is subjecting the plant to too sudden and great a change. A plant requires some time to adjust itself to new conditions. Because of this it should be accustomed to the conditions of the garden gradually. This process is known as "hardening-off." Ten days to two weeks or more before time for setting the plants in the garden begin to get them ready for the change. Begin by setting the box out in the sun at noon for a few minutes. Repeat from day to day when favorable until the plant can be left out continuously. Transplanting will then result in much less loss than if a sudden change is made.

Where plants which transplant with difficulty, such as cucumbers and melons, are started indoors, or when it is desired to have the plants unusually large before setting out, flower-pots are frequently used. Unless the gardener has a hotbed or cold-frame or the number of plants desired is small, this method is not practical because of the space required.

Instead of setting the plant from the seed box into a larger box it is put in a small flower-pot. It may remain in the pot until set in the field, or it may be moved to a larger pot. Various devices are used as substitutes for pots. Two of the more common are the bottomless strawberry box and a tin can with the bottom removed and the side split, so that it may be readily removed from around the plant. The strawberry box is better than the can for this purpose.

GARDEN SOILS AND GARDEN MAKING

Frederic Cranefield

The soils expert groups soils, with fine distinctions, into many classes. The farmer and the gardener call them "light" or "heavy," "rich" or "poor," "warm" or "cold" soils and make a "base hit" every time.

In the language of the farmer a light soil is one containing more sand than clay. It is easily worked either in spring or summer, and is also a warm soil for it absorbs heat more readily than a clay soil. But as a rule, sandy soils are lower in plant food elements than are the heavier soils.

The heavy soil is one having more clay than sand and in proportion as the clay predominates it is heavy and cold but it usually contains abundant plant food.

It is plain, then, that an ideal garden soil is one that is neither very light nor very heavy. It does not follow, however, that we should fail to have a garden even if the ideal soil is not available. Some very excellent gardens have been made on every unpromising sites. It's largely a matter of hard work.

Don't Disturb Much Subsoil:

Below the 4 to 8 inches of mellow, usually black, surface soil of tilled land lies a different kind of soil called the subsoil. It is not mellow because it has probably not been stirred for at least ten thousand years. It is usually red clay. Sometimes it is blue clay. Whatever its color gardeners should leave it undisturbed and not turn much of it up on the surface of the garden by too deep spading. An inch or two won't do any harm. It contains plant food but usually in a form that is not available until sunshine, rain and wind have acted on it for a few years. You can't afford to wait so leave the subsoil where it is: it will hold water for your plants next summer.

Make Haste Slowly:

No matter what kind of soil you have in your garden **it must not be worked when it is wet.** If it is it will be hard, lumpy and wholly intractable all season. You will lose and not gain by working soil before it is fit to work.

When is it fit? There is no hard and fast rule but here is a simple test that will answer all practical purposes.

Turn up a spadeful of soil, grab a handful and squeeze it. If it retains the shape of your hand and the finger marks, and is smooth and pasty-like to the touch, it is not fit. If you cannot squeeze the mass lightly without breaking it, if it crumbles in your hand, go ahead, there is no time to lose. Such a rough and ready, offhand solution of so difficult a problem as this requires the application of common sense along with it but the writer feels perfectly safe in leaving it in just this way.

First Aids to the Gardener:

(1) If your garden is anywhere but on a side hill you can probably advance by several days the time when it will be fit to work by a little digging and ditching so as to carry off the surface water. This should be done as soon as the frost is out of the ground.

(2) Instead of spading or plowing the entire garden before it is fit, it is usually possible to find an odd corner somewhere on the premises, even if only 2 x 4 feet, that is higher and drier than the garden. Maybe it is the flower bed in the front yard or a border alongside the horse. Dig and rake this and plant a little lettuce seed and a little radish seed, or mix them, and a few onion sets. This emergency garden will serve as a curb on your very natural impatience, give some early vegetables and will not interfere in the least with flower gardening later in the season.

(3) Or, cover a space in the back yard, 4 x 6 feet, with coal ashes a foot deep and on top of this 2 to 4 inches of soil. This quantity of dry soil can usually be found somewhere nearby, even if borrowed from a high spot in a neighboring lot or field. Build around this garden a rough frame of boards, sow seeds, and cover frame nights and on cold or rainy days with two storm windows or, lacking these, with cheese cloth. Whatever else you do keep out of the garden until the soil is fit to work.

Manures:

The soil of almost any garden is capable of producing satisfactory crops without manure of any kind if properly prepared in the spring and properly cultivated during the growing season.

The right kind of manure properly applied will certainly give increased yields but the wrong kind may be worse than none at all. The right kind is well-rotted stable manure; it is fine in texture and mixes readily with the soil. Also it is "pre-digested"; the plant food contained in it has been made ready, by the process of decay, for use by the plants.

The wrong kind is fresh stable manure containing much straw or litter. This must all be turned under so deeply that the plant roots do not get to it until midsummer or it interferes with cultivation. Being coarse it serves to "dry out" the soil by interfering with the movements of soil water. Better use none at all.

Commercial Fertilizers:

Of the mineral fertilizers, sodium nitrate and potash are best. The various stock-yards, products including pulverized sheep manure, are quick acting fertilizers that may either be mixed with the soil when spading or plowing or used later as a top-dressing.

Mineral fertilizers must be applied with great caution to growing plants as in slight excess they may kill the plants outright.

These are all very expensive and seldom give adequate returns to the amateur for the money invested in them.

None of these statements should be construed as an argument against the use of fertilizers. The market gardener knows that he can make money by using extraordinary quantities of fertilizers; in fact he is not apt to make much money unless he does use a liberal amount. Your case is different; you are not so much concerned about making a profit on your land and time as in growing a respectable crop of vegetables. You can do it without any fertilizer if you handle your soil right.

Coal Ashes:

Heavy soils may be much improved by a liberal use of coal ashes. Unless much wood has been burned in the furnace in addition to the coal there is no danger in using too much. It is better to sift the ashes to remove clinkers which prove a source of annoyance when hoeing. Coal ashes contain little or no fertility.

Plowing:

Small plots, say 20 by 50 feet or even larger, may be spaded, but when the plot exceeds one-tenth of an acre and is so situated that a team can be used it will pay to have it plowed if it can be properly done.

A farmer knows how to plow, but the average city man who happens to own a plow, doesn't. He thinks he does, but he doesn't. If possible, get a farmer or an ex-farmer to plow; you won't need to tell him how to do it; he knows more about it than you do. If you are so unfortunate as to get a city farmer to plow suggest to him that **all** of the soil ought to be turned over; that a plow that is made to cut only 10 or 12 inches cannot by any possibility **turn** 16 or 18 inches, the rest will merely be covered by the soil really plowed. This is the "cut and cover" trick, a money maker for the man who is plowing by the job but poor business for the gardener. Further suggest to him that it is a saving of horse-flesh to plow only 4 to 6 inches deep rather than to root around in the clay subsoil and turn it on top. This will please him and help you.

The Harrow:

If the garden-to-be is sod, plowing is not enough. The time and strength required to work down tough, sod-plowed land with hand-tools is really more than the crops that can be grown on it will be worth. A disk harrow will thoroughly pulverize and level the ground after plowing and is the best tool to use. In lieu of this a heavy spike-tooth harrow may be used but once is not enough. Five or six times will be much better.

Spading:

There is a knack to spading that can be acquired only by practice. It is quite as easy to cut and cover as in plowing. The spading fork with four flat tines is better than a spade for digging; it is lighter, penetrates hard soil easier than a spade and is easier to keep clean and bright. A gardener who has had long experience in spading describes the process as follows:

"Strong shoes with good solid soles should be worn when spading or the feet will become sore."

"Start at one corner of the garden with the back toward the ground to be spaded. Shove the spade well into the ground using the ball of the foot to push the spade in. In solid ground, especially in starting, several shoves may be necessary to send the spade well in. Lift out the spadeful of soil and throw it from you across the hole, turning it over as it is thrown out. If lumpy, as it is apt to be, hit it with the back of the spade. Move sideways the width of the spade and repeat the operation until the other side of the garden is reached. Then step back and work over to the starting side again, but throwing the dirt this time forward into the ditch made the first time across. Take as large a spadeful as may be sliced off quickly and easily."

Raking:

If spading is a knack, raking a freshly dug garden is a fine art. By a proper use of the rake lumps are broken and the surface leveled. Of this the expert quoted above says:

"Level the ground and make the soil fine with a hand rake. The use of a rake offers opportunity to develop considerable skill in moving dirt quickly from high spots and filling in low places in the operation of raking.

"If the garden is small and maximum results from the space are desired, further working of the soil will pay. If the soil is of a heavy clayey nature and the spading and raking fail to break up the lumps we usually 'tramp' the ground to further break the lumps. That is, we step back and forth over the garden with footsteps close together so as to pack the soil and crush lumps. A roller would do the work more quickly and easily. It is then raked over again, and, if necessary, we spade and rake it a second time.

"Even in the gardens that have been plowed with a horse it will often pay to spade up corners not well plowed or that have been heavily packed where the horses have turned.

"All of the garden will not be planted immediately following the first working of the soil and if the surface is packed with beating rains it must be worked over again before planting.

"It is very important that the soil be in the best possible condition before seeds and plants are put in.

"No amount of after cultivation will make up for careless work in the first preparation of the garden."

This cannot be emphasized too much especially in the case of the smaller seeds. The infant of the plant world is not unlike the infant of the animal world; it must be afforded the best possible opportunity for development.

SOWING THE SEED

Frederic Cranefield

Seed sowing usually proves a stumbling block to the beginner in gardening. He gets along very nicely after the plants are up but his trouble lies in getting them started.

There are apt to be many vacant rows in the beginner's garden, while he waits impatiently for the plants to appear and blames the seedsman for selling poor seeds. In most cases the seed is all right; the trouble lies with the planter. **More failures result from improper planting than from poor seeds.**

Part I. The Art of Seed Sowing

Making a Seed Bed:

For best results the soil must be mellow, moist, and free from lumps. If the surface has dried since plowing or spading and is lumpy it will pay to turn over two or three inches of the surface soil with a spading fork so as to have a moist and mellow bed for the seeds. Then rake and rake again until the surface soil, for a depth of at least two inches, is fine and mellow. In this connection let us quote from Circular No. 4.

"It is very important that the soil be in the best possible condition before seeds and plants are put in. No amount of after cultivation will make up for careless work in the first preparation of the garden."

Have Straight Rows:

Rows should be straight, not alone for the sake of appearance but for convenience in cultivating. In small gardens the garden line is most practical. Hemp rope of clothesline size is excellent. Use strong stakes that can be driven with the back of the

spade. With the line drawn taut make a furrow, deep or shallow according to size of seeds, using a pointed stick or end of hoe handle.

Dropping the Seed:

To sow seeds by hand evenly is an art that can be acquired only by considerable experience. If, in the beginning, the seeds are poured from the paper packet into a cup, both temper and seeds may be conserved. The cup is not apt to blow away and spill the seeds.

Grasp a pinch of seeds between the thumb and forefinger and scatter with a rolling motion. That's about all that can be set down in print about it; the rest must be learned from experience. The expert will space seeds by this method as evenly as a seed drill and without apparent effort.

The amount of seed to sow was briefly discussed in Circular No. 2. No hard and fast rule can be given. Better use too much seed than too little.

Cover the seeds with the back of the rake, pushing lumps aside when possible so as to cover only with fine soil. **Now press the soil firmly over the seeds** either by stepping lightly along the row, one foot only, or patting firmly with the back of the hoe. **This is held the most important step in seed sowing.** After firming the soil rake lightly to form a mulch.

Marking the Rows:

Set pegs or stakes at both ends of rows as soon as seeds are covered. In this way the space between the rows may be hoed or raked to keep down weeds before the plants appear. The best time to kill weeds is just before they appear and a light hoeing or raking within a week after seed sowing may save much backache later.

For information that will serve as a guide for operations another season the variety and the date of planting should be written heavily in pencil on the head stake of each row.

These directions and cautions as to careful preparation of soil have particular reference to small seeds like lettuce, radish, turnip, and onion, as these need a fine seed bed. Larger seeds such as beet and spinach will come through very well if the soil is not quite so fine, but they will appreciate the better treatment.

In making furrows for peas, beans and corn use a corner of the hoe. Practice counts here also.

Depth of Planting:

"Seeds should not be planted deeper than is necessary to insure the proper degree of moisture."—Goff. If we keep in mind that the reason we cover seeds with soil is to insure the moisture essential for germination it helps us greatly in determining the proper depth for planting.

The depth of planting may be regulated largely by the size of the seed. Large seeds may be planted deeper than small ons. (One important exception to be noted later.)

No definite rule can be given. Any table giving in inches or fractions of an inch the depths at which seeds should be planted is misleading, for much depends on the texture and tillage of the soil; the amount of moisture it contains, the date of planting and other variable factors. One rule, subject to many exceptions, is to cover seeds three to five times their diameter (thickness).

Small seeds like carrot, lettuce, radish, cabbage and turnip ought to be covered with one-fourth to one-third inch of soil. If the soil is very light (sandy) they ought to be planted a little deeper to insure moisture sufficient for germination. Beet, spinach and parsnip may be covered deeper, one-half inch if the soil is not too heavy. Peas and corn should be covered with about two inches of soil, beans not over one inch. Beans lift the seed above ground and if planted too deep will break their necks in the effort to get through. For this reason something is to be gained by planting in hills; that is, four to six seeds in a place, these a foot apart. If planted singly, space 1½ to 2 inches apart. Do not plant peas in "hills" but singly, about an inch apart.

Odds and Ends:

A "hill" in garden language does not mean an elevation but refers to a number of seeds planted in a group rather than singly in a row.

Cucumbers, melons, squash, and so forth, are commonly planted in hills by the market gardener for convenience in cultivation. There is no good reason for doing it in the small garden. Plant the seeds flatwise 1 to 2 inches apart, the plants to be thinned later, and cover one-half inch deep.

Seeds planted in midsummer for succession crops, should be covered somewhat deeper than when planted in the spring, in order to insure needed moisture. The soil will be more mellow and warmer than in the spring—both factors favoring germination.

Peas as well as corn and others of the "grass" family will push through greater depths of soil than beans and others that project the seed or seed leaves above the ground.

Germination (sprouting) of seeds may be hastened by soaking in water 24 to 36 hours before planting. Soaked seeds should not be allowed to become dry before planting.

The potato is not a seed and scarcely anything here written applies to it. Cut the potatoes into pieces, each having one or more "eyes" or buds, and plant the pieces singly 10 to 12 inches apart in furrows 4 to 6 inches deep.

Part II

Reasons for Some of the Operations Described in Part I

Every seed contains an embryo plant. In order to germinate (sprout) and produce a living plant three things are essential—moisture, warmth and air (oxygen). If any one of these is lacking, seeds will fail to germinate. If any one of these essentials is not present in sufficient amount, germination will be tardy. It is very important that seeds should germinate promptly or else decay will result.

Seeds absorb water promptly when placed in contact with it. In the soil the promptness and rapidity with which seeds absorb moisture will depend upon the points of contact. If the soil is not pressed closely about the seed but few points are in contact with it and a long time will be required for it to germinate. Therefore, we tramp the soil over the seed with the foot or hoe. By this means we also increase the capability or water pulling power of the soil, for moisture passes readily through soil particles which are in close contact and less readily when the soil is loose.

The proper degree of warmth is essential. This varies with the species but the variation is not wide.

Seeds of the common garden vegetables will germinate readily at a temperature of 50 to 55 degrees. Lettuce and radish will germinate at a lower temperature, 45 to 50 degrees. Peas will germinate at 32 to 40 degrees. Cucumber and squash seed require 60 degrees.

These figures are close to the minimum or lowest temperature. The most favorable temperatures are 5 to 10 degrees higher in all cases. It is useless, therefore, to plant seeds in soil that is too cold.

Water drives air out of the soil. Working wet soil "puddles" it, shutting out air. Seeds will not germinate in soil that is too wet and will germinate very slowly in puddled soil.

INSURE YOUR HARVEST

Prof. James G. Moore, College of Agriculture

The gardener's patriotism may be shown by the manner in which he tills his garden. The summer months are the critical ones in the garden. Though the gardener may feel less inclined to hoe and rake than he did earlier in the season, the plants demand even closer attention if the table is to be supplied during the summer and the cellar is to hold an abundant supply of vegetables next winter.

The gardener's motto at this time should be "Catch moisture, hold moisture". The demand for moisture as the plants grow and the warmer weather comes on constantly increases,

moisture is needed for plant growth, and unless there is an abundant supply, growth ceases and the parts used for food fail to develop or are of such a nature as to be undesirable. Moisture, then, becomes the chief concern of the gardener at this time. Tillage is the chief means the average gardener has of insuring this essential of successful gardening.

But the demand for moisture is not the only one made by the plant at this time. An abundance of available plant food is necessary for good yields. The manure or commercial fertilizer which is applied in preparing the soil will be of no use to the plant unless it becomes changed in the soil. Tillage not only aids in this change but it also helps make the food material, originally held in the soil particles, suitable for use by the plant.

The old sayings "Tillage is essentially manure" and "The best garden fertilizer is the hoe" indicate the value of tillage in giving the plant an abundant supply of available food.

Weeds cause many a garden convert to backslide. In the conflict with weeds tillage is of prime importance. Proper tillage makes weeds an unimportant factor in gardening. Under some conditions it may not do so the first season, but unless quack grass or some weed of similar character is the offender, the conflict is a comparatively easy one.

The importance of tillage makes the summer months the "Three T" period of gardening—the **thorough, timely, tillage period.**

Thorough Tillage

Conserving soil mosture, making plant food available, and keeping out weeds are the objects of tillage. Thorough tillage is that tillage which produces conditions best fitted to accomplish these results. The ideal way to accomplish them is to keep a **shallow layer of soil, as nearly dustlike as practical, over the entire surface of the soil at all times.** The methods of securing this ideal matter little so long as the purpose is accomplished.

The first essential of success is proper preparation tillage early in the season. This should have been such as to create a large moisture-holding reservoir and to put the soil in a fine, fairly loose condition. If this was done, the following program is well adapted to maintain the desired mulch.

1. Till the area to be planted immediately preceding sowing or planting. This gives a good seed bed and removes the necessity of disturbing the seeds after planting.
2. Till the area between the rows immediately after planting. The object is to loosen the soil compacted by tramping during the planting operations.
3. Till the entire garden at least once a week if soil conditions permit. When vegetables planted close together cover the entire area between the rows tillage of these rows may cease.
4. Till after each shower of sufficient extent to pack the surface soil.

This tillage should be shallow. Deep tillage would destroy many roots and possibly do more harm than good.

Remember the object to be attained is a shallow layer of soil as nearly dustlike as practical over the entire surface.

Timely Tillage

"Don't put off till tomorrow what should be done today" pays big dividends if put into practice in gardening. "A stitch in time sames nine" when garden conditions are most favorable for tillage.

Aim to destroy weeds just as they appear above the surface. It will save hard work in getting rid of them later.

The soil mulch destroyed by a rain is restored much more easily by tillage before the surface becomes baked. A few hours' delay at this time means more work and usually less satisfactory results than if the work had been done on time.

Tillage may be untimely by working a soil which is too wet. Heavy loam or clay soils worked when too moist, cement or puddle and then bake. Their tilth is destroyed, and it becomes difficult or impossible to re-establish a good soil mulch. "Make haste slowly" on heavy soils after a rain. Timely tillage on such soils means not tilling too soon, as well as not delaying too long, after a rain.

If in doubt, take a handful of soil and squeeze it firmly. Tillage is safe if the soil falls apart or crumbles easily when the hand is opened. If the particles adhere tenaciously let it dry more before tilling.

Tillage Tools

The best tillage tools are the ones you can use most efficiently in establishing and maintaining the soil mulch. Gardeners have their likes and dislikes regarding tools. What suits one does not suit another, but in any case the list does not need to be extensive.

The spading fork is better than the ordinary spade for use in preparing the soil and will often be found useful even on gardens that are plowed. The hoe and rake are the chief tillage implements in the average small garden. If they are of the proper kind and properly used no others are necessary. The Norcross type of cultivator saves much time and does efficient work if properly used, and there is less danger of doing poor work with it than with the hoe.

More than half the garden hoeing is less than half done. This is because most inexperienced and many experienced gardeners do not know how to use the hoe as a tillage implement. The aim in hoeing should be to leave the entire surface fine, loose and level; hoeing properly done stirs all the soil possible. Many gardeners fall short of this by pulling a quantity of soil on top of an undisturbed area. This leaves the surface in small hills and hollows. Then the hills are raked into the hollows and only about half the area is covered with an effective soil mulch. Operate the hoe not only so as to stir all the soil but also to leave it level and fine. In most hoeing the soil is moved too far.

Many a gardener becomes so intent in hoeing that he overlooks the purpose of the hoeing. It does little good to establish a soil mulch and then to destroy it immediately by tramping the loosened soil. Aim to have as few foot prints visible after the hoeing is finished as practical. With this purpose in mind you will quickly devise ways of reducing the tramping without loss of time or efficiency in tillage.

The small hoe and narrow rake are preferable to the larger sizes. They are easier to operate, can be used closer to the plants, and, **if the soil is** compact, better work can be done with less expenditure of energy. A three-cornered hoe with the handle attached at one corner (an onion hoe with a long handle) serves as both hoe and weeder, and does as good or better work with greater ease than the hoe with a large blade or the hand weeder.

The garden rake is essentially a "preparation tillage" tool but can be substituted for the hoe when the rows are far enough apart to permit of its use. Used with a slight chopping motion it saves time in establishing a soil mulch. The straight rake with straight teeth is preferred.

The time saver in maintenance tillage is the Norcross type of hand cultivator. It is built on the plan of the wheel hoe or horse cultivator but is operated by hand with a motion similar to that used by most people in hoeing.

Resolve to make your garden investment pay maximum dividends by **thorough, timely tillage.**

PROTECT YOUR GARDEN

Prof. L. G. Genter, College of Agriculture

If it is worth while to plant a garden, it is worth while to protect it. Insects cause heavy losses to garden crops where no effort is made to control them, while a few simple measures applied at the right time will usually entirely prevent such losses.

One of the first things to do in the spring is to get the garden and fence corners free from weeds. At all times of the season gather up and destroy all old vines, stalks and refuse as soon as the crops are harvested. Refuse and weeds furnish food for insects and shelter them for the winter if left in the garden.

Do not let insects get a start. After they once become numerous on the plants it does not take long for them to do a large amount of injury, especially on young plants. Every insect that you let live through the spring season will produce many more later.

Where insects are few in number and are easily seen, they may be controlled by hand picking and destroying. But in most cases it is much more practical to spray the plants.

Liquid sprays may be applied with a small hand sprayer which can be bought at a small cost. Dust sprays may be dusted through a cloth sack, or perforated tin can or by means of a dust gun.

Use Poisons on These

Poison sprays, poison mashes, or contact sprays may be used to eradicate certain garden pests. Here are some of the most common insects, together with the poisons to use on each of them.

Chewing Insects. Insects that eat the leaves and tender parts of the plants may be controlled by spraying the plants with lead arsenate at the rate of 1 ounce (15 level teaspoons) to each gallon of water. When applied to plants with smooth foliage, such as cabbage, it is necessary to add an inch cube of common laundry soap to every gallon of spray to make it spread and stick better. Instead of using it as a spray, lead arsenate may be dusted on the plants early in the morning while they are still wet with dew. When used in this way it may be diluted with 3 to 5 times its weight of air-slaked lime or fine dust. Lead arsenate is preferable to Paris green because it remains on the foliage longer, is not so likely to burn the leaves, and is cheaper, especially since the war has greatly increased the price of Paris green.

Outworms cut off young plants near the surface of the soil and eat the foliage of older plants, feeding at night and hiding in the ground during the day. A small number of plants may be protected by cutting the tops and bottoms out of tin cans and placing them over the plants, pushing them well into the soil. Keeping down weeds and thorough cultivating of the soil is also of value. Larger areas may be protected by applying poison bran mash to the soil in the late afternoon or early evening. Either broadcast the material or place in little heaps near the bases of the plants. **Care should be taken to keep poultry and livestock away from it.**

To make up the poison bran mash mix 2 ounces Paris green or white arsenic or 4 ounces of arsenate of lead with 3 pounds of bran. Add 2 ounces of cheap syrup or molasses, ½ orange or lemon finely ground and a small quantity of water. Then mix all together, adding enough water to make a crumbly mash. One half teaspoon lemon extract may be used instead of fruit.

Grasshoppers may be controlled by poison bran mash made up as for cutworms. Tomatoes or melons may be substituted for oranges or lemons. The mash should be applied in the early morning so that it will not dry out before the insects feed on it. If the grasshoppers keep coming in from nighboring grass fields scatter the mash along the edge of the garden toward the field and renew from time to time.

Plant lice are small, soft-bodied insects which may be found massed together on the under sides of leaves and on tender shoots. They injure the plants by sucking the juices and for this reason cannot be controlled with arsenate of lead. They may be controlled by applying some contact spray, such as strong soap (preferably fish oil soap) at the rate of one-half pound to 4 gallons of water; or 40 per cent nicotine sulfate (Black Leaf 40), 1 teaspoon to 1 gallon of water with the addition of an inch cube of soap. The spray must actually cover the insects and should be forced well into curled leaves. If all are not killed by the first application, the spray should be repeated.

Be Careful of Poisons

Lead arsenate, white arsenic, and Paris green, recommended in this circular, are deadly poisons, and care should be taken to keep them away from children and domestic animals. Bean plants should not be sprayed after the pods have formed, nor tomatoes after the fruit is nearly full grown. There is no danger of poisoning to the consumer from eating sprayed cabbage because the cabbage head grows from the inside and the outer leaves are removed before cooking. The outer leaves, however, may have enough poison on them to kill

Kill These Directly

Some common garden insects cannot be reached or controlled by sprays, and must be removed by gathering the insects and destroying them, or by destroying their eggs.

Squash bugs cannot readily be controlled by means of sprays. They will collect under pieces of board or burlap and may be gathered and destroyed early in the morning. The reddish brown eggs are laid in clusters on the under sides of the leaves and may be gathered and destroyd.

Repellants Keep These Out

Many insects which cannot easily be poisoned or killed directly may be kept out of the garden to a greater or less extent by the use of repellants —which keep the insects away, even though they do not kill them.

Root Maggots. The cabbage maggot may be controlled on cabbage and cauliflower plants by placing tarred felt discs about the stems of the plant at the surface of the soil, just as they are being set out. After the maggots have begun to work on the roots there is no practical remedy.

For maggots attacking onions, radish and turnips no satisfactory remedy has as yet been found. Infested plants should be pulled up and destroyed. Small beds of these may be grown under cheesecloth screens.

Burnished Plant bugs, dull grayish to brownish pests abount ¼ inch long, fly readily when disturbed and cannot be controlled with sprays. They may be driven from the garden by dusting the rows with wood ashes, working from one side to the other.

Flea Beetles. These little black jumping beetles are quit often serious on potatoes, tomatoes, cabbages, beans, and similar plants. Arsenate of lead seem to have little effect on them, but they can be kept away from the plants with Bordeaux mixture. This is made up as follows: 4 ounces bluestone, 4 ounces quicklime, 12 quarts water. Dissolve the bluestone in a wooden or earthenware vessel, using hot water, then add water to make 6 quarts. Slack the lime by adding water a little at a time. When slaked

make up to 6 quarts. Pour the two solutions together through a strainer while stirring. The spray is then ready to apply. Both the upper and lower leaf surfaces should be covered. A combination of Bordeaux mixture and poison may also be used.

Cucumber Beetles. These yellow and black striped or spotted beetles are also not easily affected by poison, but their food plants, such as cucumber, squash, and melons, can be made unattractive to them by dusting with a mixture of powdered lime and tobacco dust. Mix 1 pound of tobacco dust in 2 pounds of well-pulverized lime and dust the mixture onto the plants using a gunny sack or a tin can with small holes in the bottom. A small number of plants may be protected by placing cages over them. These cages may be made by cutting barrel hoops in two, nailing the halves together at right angles to each other, and covering with cheese cloth. Planting a large number of seeds per hill will help to get a better stand.

STRAWBERRIES FOR HOME AND MARKET

Frederic Cranefield

The purpose of this article is to help the beginner; it is not meant to be a treatise on strawberry growing.

The points discussed cover only the first season so no attempt has been made to distinguish between growing for home use and for market as the methods are the same in both cases.

Soils:—Any soil that will produce a good crop of corn will produce a good crop of strawberries. Strawberries are grown for market in Wisconsin on light sandy, gravely loam, black prairie and light clay soils and successfully in all cases. The kind of soil is of slight importance except that it must be well drained.

Site:—Level ground is best for strawberries or any other fruit crop. A few days in earliness may be gained by planting on a south slope or ripening may be retarded somewhat if the plantation is on a north slope but the difference is so slight that it rarely offsets the added expense and inconvenience of cultivation on sloping ground and the necessity of planting so as to avoid erosion. The mid-season crop is the most profitable one for Wisconsin growers. No matter how much we struggle for earliness, Illinois can beaet us by three weeks.

Preparation of Soils:—Don't plant strawberries on sod land, that is land on which grass has been grown for two or more seasons as such soils are quite sure to be infested by the white grub which will feed on the roots of the strawberry plants.

Soils light in texture should be plowed in the fall and only lightly disked or harrowed in the spring just before planting as strawberry plants do not grow well in soil that is very loose and mellow. On heavy soils spring plowing is preferable.

Manure:— Strawberries require a soil rich in plant food in order to produce paying crops. It will be a waste of time to plant for market on thin, worn out soil without first manuring. If stable manure can be had apply 10 to 25 loads per acre.

It should not be inferred form this that all land must be heavily fertilized with stable manure before planting as average farm or garden land that has been fairly treated as to fertilizers in former years will produce a good crop of plants the first year, if thoroughly cultivated, and commercial fertilizers may be applied the second and succeeding seasons.

Plants & Planting:—Runner plants of the preceeding year's growth are the only ones that should be used. Plants that have once borne fruit are not suitable, scarcely worth planting. Nurserymen furnish only runner plants. If plants are received from the nursery packed tightly in bundles, open the bundles at once, separate the plants and either pack in boxes or baskets with damp moss, chaff or sawdust, separating the roots or else "heel-in" outdoors.

For convenience in planting shorten the roots, removing about one-fourth in length. Remove all leaves but one or two before planting.

Strawberry plants may be set as close as 18 inches in the row and the rows four feet apart but for most varieties 24 inches in the row is better. At 2 by 4 feet 5,445 plants are required for an acre.

Plants are usually set by the spade method, two persons working in company. This plan is a very simple one but requires more space to describe than is available here.

One thing is highly important, viz., the proper depth of setting. If the plants are set too deep the "crown" or growing point if covered; if set too high the roots are exposed. In either case the plant may fail to grow. With a little practice the right way may be found.

Cultivation:—Keep the soil loose, mellow and free from weeds throughout the season by frequent cultivation. An adjustable one-horse cultivator is a good tool to use. Run close to the plants at first and as the runners stretch out into the space between the rows, close up the cultivator allowing the plants to set thickly in matted rows two feet wide, thus leaving a two-foot path between the rows. Care should be taken to keep the rows full of plants by training runners so as to fill vacant places. This is what is known as the "matted row" system, the most practical for the average grower. Where there is a demand for very large berries, uniform in size, the single or double "hedge row" or hill system may be adopted.

If the ground is rich and the season favorable too many plants may set. In this case as the season advances remove the surplus until the plants in the row stand about six inches apart.

Remove all blossoms the first season as soon as they appear. All of the energies of the parent plants must be directed to plant making the first sason and not wasted in the production of flowers and fruit.

Considerable hoeing and weeding will be needed the first season for the beds must be kept clean. Grass and weeds rob the strawberry plants of food and moisture. We should endeavor to secure a good stand of strong, vigorous, deeply rooted plants the first season; lacking this we cannot expect a profitable crop of fruit next year.

Perfect and Imperfect Flowers:—Some varieties of strawberries produce only imperfect flowers. These flowers have no stamens and are therefore incapable of self-pollination. It is important to keep this fact in mind when selecting varieties, for if only imperfect-flowered varieties are selected no fruit will be borne. A part of the plantation at least must be of kinds bearing perfect flowers. Nurserymen indicate in their catalogues the imperfect varieties by the abbreviation "Imp."

Kinds to Plant:—The amateur as well as the professional soon learns that in the selection of varieties he must be guided largely by local conditions of soil, climate, etc. and that no list can be given that will be satisfactory over the whole state. However, two varieties, Warfield and Dunlap, seem to give satisfaction over a wider range of soils and climate in Wisconsin than any other standard varieties. Some growers advocate planting only Dunlap.

Fall Bearing or So-called Everbearing Strawberries

Within a few years a new group of strawberries has appeared, the so-celled "everbearers." These kinds do not, as the name indicates, bear throughout the whole season but produce a crop at the same season as the standard varieties and, after a short

rest period, a second and often a third and a fourth crop, frequently fruiting from June to November.

Enough berries, a straggling few, are borne between crops to partly justify the name "everbearing."

These kinds are most excellent for the home garden but the beginner who is growing for market should not plant heavily of the everbearers but stick to the standard sorts. The experienced grower, especially if he has an irrigation plant, can usually grow them profitably. The most popular kinds are Americus, Progressive and Superb. Progressives seem to be the most prolific; Superb large fruit, and Americus more nearly an all season or everbearer.

Mr. M. S. Kellogg of Janesville who has grown the "everbearers" since the first commercial varieties appeared, sixteen years, has this to say of them:

"This class of fruit has passed the experimental stage and has become a necessity for the home garden and for the commercial grower when conditions of soil and market are favorable. In growing the Everbearers the following is the most approved method of culture. Plant as early in spring as the conditions of soil and weather will permit, keep all bloom removed from the plants until about one month before you wish the fruit to begin to ripen. Allow the plants set to produce from four to eight runners and when these are rooted keep all other runners cut off as soon as they appear. You will then have a hedge row or half matted row system and if clean culture is given and with good fertile soil you will get lots of berries. If you wish fruit do not let them make too many plants. A bed of Everbearers after having fruited the year of planting should be well covered and can be carried over to fruit the following June if desired or the fruit stem can be kept off the second season until July 15th and they will bear again in the fall. Right varieties, rich soil and good culture will win with the Everbearers but the greatest of these is GOOD culture."

As stated in the beginning these few hints are meant only for the beginner. Questions concerning strawberry culture not mentioned here will be answered cheerfully and promptly on application to Secretary State Horticultural Society, Madison, Wis.

RASPBERRY CULTURE

Hints for Beginners

Frederic Cranefield

Two kinds (species) of raspberries are commonly cultivated for home use and for market, the red and the black—the latter known as black-caps or simply "caps."

These kinds, aside from their color, differ in the manner in which they are propagated.

Red raspberries are propagated by "suckers" from the roots of the parent plant. In the black-caps plants grow from the tips of the branches when these are covered with soil or are held in place by a lump of earth or other means.

Soil:—Raspberries thrive best on clay loam soil with clay subsoil or on gravely clay loam; in other words soils with much water holding capacity. Don't plant raspberries on thin, gravelly, or sandy soil and expect to be successful.

For paying crops apply plenty of stable manure.

RED RASPBERRIES

The culture of the red raspberry is influenced at every step by its habit of producing suckers or shoots from the roots. The first year of its growth a number of suckers will develop from the parent plant but not more than needed. The following year, however, and each succeeding year, innumerable suckers will spring up, not only close to the plants but between them and in fact wherever the roots extend. It is plain that their surplus growth of plant must be restricted or the field will soon become merely a brush patch, yielding little or no fruit.

Two methods of culture are in common use by growers, the hill and the matted row. Good paying crops may be grown by either method.

In the case of the hill plan the plants are set 2 to 2½ feet apart and the rows 6 feet apart. After the first season the suckers are confind to hills of 8 to 10 or 12 canes and all others removed.

In the matted row the plants are set 12 inches apart in the row and the suckers allowed to form a matted row 12 to 15 inches wide and the canes 6 to 8 inches apart. The matted row usually yields better returns than the hill system.

One method of planting is to plow shallow furrows for the rows, after the field has been plowed and harrowed, then set the plants the required distance and cover the roots, using a hoe or spade and tramping firmly about the roots. If the ground is mellow three to four inches of soil over the roots is enough and not too much.

If a large field is to be planted and a number of planters work systematically no doubt the furrow method will save time but the average planter will set by hand using a spade.

Cut back the tops at planting time leaving only short stubs. Where available a plant-setting machine commonly used for setting tobacco plants, can be used to advantage.

As the season advances a number of shoots or suckers will appear. These develop into plants which produce fruit the following year.

Some growers advise pinching the shoots the first season when about eighteen inches in height but this is not an important matter. Something may be gained by pinching but certainly no harm will result if it is not done. Cutting back the matured canes the following spring is a matter of the highest importance as will be shown later.

The ground should be kept clean and mellow all the season by frequent cultivation and hoeing. Vegetables may be grown between the rows the first season but don't plant strawberries between raspberry rows, as the strawberry plants interfere with cultivation or mulching of the raspberries the following season when it is most needed. Three thousand six hundred and thirty plants are required when planted 2 x 6 ft.

Black Caps

Black caps require rather more room than the reds. The reds are upright growers while the blacks are spreading in habit. Three feet is close enough in the row and strong growing varieties ought to have even more room. The rows may be 7 feet apart. An acre planted 3 x 6 ft. requires 2420 plants.

In contrast to this one successful grower plants black-caps eighteen inches apart in the rows and renews the plantation at the end of two years, taking only one full crop.

The "tip" plant of the black raspberry as received from the nursery is a flattened, compact bunch of fine roots with a single stem arising from the center. Around this stem are numerous buds that develop into other stems or "canes". If this bud cluster is covered too deep with heavy soil the buds will not push thru. We are therefore confronted with the problem of covering the roots deep enough so they will not dry out and shallow enough to avoid smothering the buds. It can be done and the least difficulty

will be experienced in soil that has been well prepared before planting.

Cultivation the first season is much the same as for the reds except that the black caps do not form suckers from the roots. The only canes or stems that grow will be from the bud cluster mentioned above. Usually there are not too many of these the first year, five or six, and are all retained.

As in the case of reds there is no objection to growing an annual crop between the rows the first season. Two rows of beans, one row of potatoes or other root crops, may be grown between each two rows of raspberries without serious detriment to the berry plants.

No fruit will be borne the first year on either reds or blacks.

Every effort should be used the first year to secure a strong growth of plants. Deep rich soil and thoro cultivation will produce plants that will bear more than one-half a normal crop the following year while starved plants will produce nothing. A full crop is not expected until the second year after planting. A raspberry plantation should yield profitable crops for four to six years.

It has been the universal practice in the past to build a trellis or support for raspberry plants both red and black but this is now rarely done. Growers have now learned that properly pruned plants require no trellis or other support. This subject of pruning will be discussed in a later publication but mention is made of it here as a matter of encouragement to beginners.

Varieties: As in the case of other fruits opinions of growers differ widely when it comes to selecting varieties. The following kinds are popular with Wisconsin growers:

Red: Marlboro, King, Cuthbert, in the order named.

Black: Plum Farmer, Cumberland, Gregg, as named.

Other Kinds

Purple Raspberries: The Columbian, Shaffers Colossal and perhaps other varieties, strong growing kinds sometimes producing canes twelve to fifteen feet in height and an inch or more in diameter, bearing purplish fruit, are hybrids produced by crossing the red and the black raspberry.

The purple or purple-cane raspberries are better adapted to the home garden than to growing for market. They are not more productive than the red or the black, the rank growth interferes with proper cultivation and involves greater expense in picking. Also the very unattractive color of the fruit lessens its market value.

Everbearing Raspberries: The so-called everbearing raspberries are to be classed with the everbearing strawberries, interesting and attractive to the amateur but of little value to the commercial grower. The St. Regis is the best known of the everbearing type.

TREE FRUITS

Frederic Cranefield

Planning and Planting the Orchard

Soil and Site: Fruit trees require well drained soil. The character of the soil is of less importance than the drainage. Much has been written about the right kind of soil for apples, cherries and plums, greaet stress being laid on the character of soil necessary to produce paying crops. Some of it is true but a little observation will show many very fine orchards in Wisconsin on a wide range of soils. The very thin soils of Door county produce wonderful orchards, so also do the deep loamy soils of Crawford county while the very oldest apple trees in the state are growing in the black loam of Jefferson and Rock counties. Don't worry too much about the right kind of soil.

As a commercial proposition it is well to take account of the fact that trees on deep clay loam soil will require longer to come into profitable bearing than those on light, sandy or gravely soils,—and live longer.

For the home orchard of a dozen trees plant near the house regardless of the nature of the soil,—if it is well drained. Many people believe that an orchard should always be planted on sloping ground. This idea probably arises from the fact that our forefathers in Massachusetts and Virginia planted apples on hill sides but this was because it was found that trees would grow there, thus reserving the level land for corn or other crops which required cultivation. Level well drained land is preferable on account of ease of cultivation. If only sloping land is available choose a north slope rather than a south slope.

Air Drainage: This is also important. A free circulation of air thru the trees tops hinders the development of disease and insects. If trees are planted in a low spot where cold air settles the fruit buds may suffer from frost.

Causes of Failure: Many thousands of trees are set out every year in this state; some live, many die.

In some cases the nurseryman is at fault. More often the planter is at fault. The trees may arrive in good condition but in the rush of spring work the bundle is laid aside until a convenient time arrives to plant, or the trees may be improperly planted.

Trees and plants in small lots are packed in bundles at the nursery. If the work is well done the roots should be packed in damp moss or excelsior and this covered with burlap. The tops should also be completely covered either with rye straw or burlap. This packing is usually sufficient to protect the plants from drying until they have arrived at their destination, **but is not intended to preserve them longer.**

Never under any circumstances leave the trees in the shipping package, even over night. If possible plant at once, otherwise open the bundle and "heel-in" the trees or plants.

"Heeling-in" is temporary planting. To do this dig a trench wide and deep enough to accommodate the roots with one side sloping.

Open the bundle, lay the trees separately in the trench with tops resting on sloping bank. Cover the roots with moist earth sifting it well among the roots, tramping firmly. In addition a mulch of straw or manure will help to preserve moisture. Treated in this manner trees may remain in the trench for several days. If trees are shrivelled when received bend down the tops after heeling-in and cover them with moist earth. Often in two or three days they will be found to be plump and fresh.

Planting: The ground should be deeply plowed and well cultivated before planting. Do not set fruit trees in sod. The grass roots will reach out and rob the trees of food and water. If you cannot devote a piece of land to trees alone and keep it in cultivation, do not attempt fruit growing as the results will be disappointing.

Dig holes large enough to accommodate the roots after these have been cut back to sound wood. Trim broken and crushed roots back to sound wood, do not cut off more. Don't worry about the fine, fibrous roots about which so much has been written,—these are dead anyway if the tree has been out of the ground more than an hour,—take care of the larger roots for it is from these that growth starts.

The hole should be deep enough to

admit setting the tree about two inches deeper than it stood in the nursery. Spread out the roots and sift fine earth about them and pack firmly with the feet. If the earth is moist and mellow it cannot be tramped too firmly. It must be in close contact with the roots in order to enable them to take up the water it contains.

Pruning:—The tree is now safely anchored in the ground but the work is not finished. At this point arises the most common cause of failure. Some of the branches must be removed or the tree is apt to perish.

Before removal from the nursery the tree had sufficient roots to supply all of its buds with water. In digging, most of the roots have been (necessarily) removed, but the buds are left. When growth begins every healthy bud will push out and call on the roots for water to feed its newborn leaves. The very limited supply that the reduced root system can pump up will be distributed equally and as a result none may have enough to develop its leaves and without leaves the tree must perish. We must, therefore, reduce the number of these water pumps by removing **one-half to three-fourth of the buds.**

The drier the ground and weather the more we should cut off. The manner in which the cutting is done will depend to a great extent upon the kind of tree. In apples, plums, etc. we need to bear in mind the ultimate shape of the tree. The framework upon which the branch system is built is determined largely at this time. Remove crowding, crossing, and interfering branches. Aim to leave the main branches spirally about the stem rather than opposite. The lower opposite branches in fruit trees form bad forks that may split down later. Don't be afraid to cut; failure will result unless much cutting is done.

Distance to Plant:—Apple and crab trees should be planted 24 x 24 feet which will require seventy-five trees to the acre.

Plums and cherries may be planted as close as 16 x 20 feet but 20 x 20 feet is better. At 20 x 20 feet 108 trees are required for an acre.

Cultivation and Cropping:—The orchard must be cultivated for at least several years after planting if profitable returns are expected. Weeds and grass must be kept down and the soil stirred to encourage growth. There is no need, however, of devoting all of the space between the rows to the trees the first four or five years, hence intercropping is suggested.

Beans, garden peas, potatoes or other hoed crops may be grown without serious detriment to the trees, but corn, except possibly sweet corn, ought not to be planted in the young orchard as it takes too much from the soil and shades the young trees. Cultivation should cease soon after July 1st in order to permit ripening of the wood growth.

Protectors:—To prevent damage by mice and rabbits during winter the trunks of the trees should be covered with wire screen or tarred paper. If the paper is used it should be removed in the spring

Buying Trees:—Buy only two year old trees of apple. One year cherry trees if well grown in the nursery are often as good if not better than two year old. Two year old plum trees are usually sent out by nurseries. Buy of Wisconsin nurserymen. We have many reliable nursery firms in our own state who can furnish any of these varieties. Why buy elsewhere?

Place you order in fall or winter for early spring delivery. Do not plant fruit trees in the fall.

Varieties

Apples:—The varieties named below are all standard, reliable and hardy and have been thoroughly tested in Wisconsin for fifty years or more.

For the home orchard of a dozen apple trees the following selection will give satisfaction: 3 Duchess (early), 5 Wealthy (mid season), 4 Northwestern Greening (winter). If a greater variety is desired add McIntosh (midseason), Tolman Sweet (winter), and Windsor (winter). For north-central and northern Wisconsin substitute Patten Greening for Northwestern and omit McIntosh.

Do not plant Transcendent crab anywhere in Wisconsin on account of its tendency to blight, plant Martha or Hyslop instead. The commercial grower will want to add to the above. A full list of tested varieties will be found in the Annual Report of this Society. (Sent free to members).

Plums:—Surprise, DeSoto, Hawkeye, all natives, all reliably hardy anywhere in Wisconsin and all sure croppers.

None of the European or Japanese plums are long-lived in Wisconsin but trees of certain varieties often live to bear several crops.

Try: Green Gage, Lombard and Moore's Arctic for European and Burbank for Japanese.

Cherries:—Where cherries thrive plant Early Richmond and Montmorency, no other.

Pruning:—Prune tops severely as soon as planted, removing 50 to 75 per cent of branches.

Care:—Cultivate often enough until midsummer to keep down weeds and grass and to keep soil mellow.

SUMMARY

APPLES

Soil: Clayey loam with permeable clay subsoil preferred, other soils nearly as good.

Site: Elevated, level. If sloping land only is available choose north slope rather than south.

Distance Apart to Set Trees: 24 by 24 feet.

Age of Trees to Set: Two year old.

PLUMS. (Native)

Soil: Any well drained land. Native plums are adapted to a wider range of soil than other tree fruits. Many varieties thrive on sandy soil.

Site: Same as for apples.

Distance: 20 by 20 or 16 by 20 feet.

Age of Trees: 2 years.

Culture: Same as for apples.

CHERRIES.

Soil: Light, well drained soil. Cherries will not thrive on heavy moist land.

Distance: 20 feet.

Age of Trees: 1 or 2 years.

Culture: Same as for plums and apples.

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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, March, 1919 | Number 7

The flowers in the foreground are Lupines, perennials hardy at least in Southern Wisconsin.

Growing and Marketing Plants

H. C. Christensen

The growing of vegetable plants in greenhouses, hotbeds and cold frames for market may be made quite an additional source of income to the gardener, especially as most of the work connected with it may be done at a time when outdoor work does not claim one's attention.

The war gardens of the past two years have greatly increased the sale of plants and the demand has been almost unlimited, and as the interest in gardening has been stimulated by war work the demand will probably continue to be good for some time yet.

I believe it will pay one to have a small greenhouse to start the plants in, as it eliminates much of the cold, disagreeable work connected with early hot-beds, and as it is getting harder to secure materials for making hot-beds the cost of heating is not any greater.

A good supply of soil should be secured in the fall. If one has a greenhouse it is filled then, if hotbeds it is put in piles and covered with manure to prevent freezing. We like a clay loam that is prepared by plowing under a heavy sod in the fall, working it thoroughly through the spring and summer to reduce the sod and keep it free from weeds. To this is added one-third of well rotted manure and some sand if the soil is very heavy.

A good supply of flats will be needed if the plants are to be sold to the grocers or retailers. We use two sizes, 16½″ x 22″, 12″ x 16½″ and 3″ deep as these sizes fit conveniently in either a 3ft. or a 3ft. 4 in. sash frame. A few pots and dirt bands will be needed, as there is some demand for potted plants.

The plants that are mostly in demand are: celery, tomatoes, pepper, egg plant, cabbage, cauliflower, kohl-rabi and head lettuce. To these may be added a few flowering plants as asters, salvia and pansies.

Our earliest tomatoes are sown in the greenhouse about the first of March. When the plants have 4 or 5 leaves which will be in 5 or 6 weeks they are set into hotbeds about 2½ inches apart and when about 4 inches high are set in the larger sized flats, six dozen to a flat. These sold last year for 15 cents per dozen. For home trade we pull them directly from the beds and charge 20 cents per dozen. Some of the plants are set in the flats directly from the seed flats, but it is harder to secure uniform plants by this method.

Four inch pots are used in potting and plants from these sell for 60 cents per dozen. We grow the Buckstaff, John Baer and Dwarf Stone. While the last named is not a heavy yielder, the stocky plant it makes causes a demand for it which we try to discourage. To keep up a succession of plants, seed is sown every 3 weeks until the middle of April.

Egg plants, pepper and salvias are slow growing plants, so we sow the seeds of these the latter part of February. When the plants have grown 4 or 5 leaves they are set in hotbeds about the same distance apart as the tomatoes and when 4 inches high they are set in the smaller sized flats, 2 dozen egg plants, 3 dozen salvias and 3 dozen peppers to a flat. The egg plants bring 25 cents, the salvias 30 cents and the peppers 15 cents per dozen.

The first cabbage, cauliflower and kohlrabi seed is sown about March 1st. They are grown as cool as possible with as much ventilation as weather will permit, so the plants will be stocky and hardy. In preparing a bed for cabbage, we first put about 3 inches of the well enriched soil on the bed and about an inch of soil on top of this that has no manure in it, sowing the seed in drills in this. It helps to prenvent damping off, to which cabbage and especially cauliflower are particularly liable. When the plants are about the right size for setting we transplant into smaller sized flats, eight dozen to a flat. The cabbage and kohl-rabi bring 10 cents and the cauliflower 20 cents per dozen. The home trade is supplied directly from the frames at 8 cents per dozen or 60 cents per hundred. To keep up a succession, seed is sown every three weeks up to the first of June. Cauliflower brings 15 cents per dozen.

For early cabbage we grow Jersey Wakefield, Copenhagen Market and Glory of Enkhousen and for later, Succession and All-seasons. For cauliflower Early Snowball and Dry Weather. White Vienna is the only kohl-rabi we grow.

Celery, Celeriac and parsley are sown in flats in the greenhouse, about the middle of February. The soil in the flats is smoothed off and firmed with a board and the seed sown and then a quarter of and inch of clean sand sifted over the seed to prevent damping off. When the seedlings have 3 or 4 leaves they are set into the smaller flats 8 dozen to a flat, and bring 10 cents per dozen.

Asters are treated about the same as celery only the seed is not sown until the middle of March.

Pansies are sown in July the year previous and wintered over in cold frames. When in bloom they are lifted with a trowel and set into the larger flats 4 dozen to a flat. They bring 30 cents per dozen.

Of late years there has grown to be quite a demand for head lettuce plants. The seed is sown the middle of March and as soon as the seedlings have 4 or 5 leaves, they are set into the smaller flats 4 dozen to a flat and bring 10 cents per dozen. May King is grown mostly.

The greater part of our plants are sold to the grocer, though we also have a good trade at home, as small gardens are numerous in our vicinity. Occasionally when we have a large supply we advertise in the daily papers.

Roses for Lawn and Border.

There is a rose for every purpose, say flower specialists of the U. S. Department of Agriculture. Selection and breeding have been practiced with this best loved of all flowers for ages, and have resulted in the development of a multitude of rose varieties, some of which are adapted to use under almost any conceivable conditions. By familiarizing himself before the planting seasons in fall and spring with the different types of roses and the purposes for which they are especially suited, the rose gardener in city or country may add greatly to the attractiveness of his home.

Roses for use on lawns and along borders must have habits of growth and foliage which fit them particularly for mass effects. Foliage, in fact, is more to be desired under such conditions than fine flowers, since it is a feature during the whole growing season, while the flowers may cover a period less than a fortnight in length. When suitable sorts are chosen, roses are quite as appropriate and effective for use in relief planting about the ground line of buildings or in masses upon the lawn or along borders as other ornamental shrubs. For such use, however, they must be hardy and moderately free in growth, and must possess foliage reasonably disease-resistant and free from insect attack.

One of the roses which has been found admirable for this landscape planting, is the Rugosa or Wrinkled Japanese rose. It is hardy in the north, succeeds well in the south, and thrives within reach of ocean spray. It blooms nearly all summer. Both red and white varieties are available. The Carolina rose, also suitable for lawn use, thrives in the entire territory east of the Mississippi river succeeding especially well in moist places. Both these varieties are relatively tall, reaching a height of from 6 to 8 feet. The **Rosa lucida,** a wild type native from Pennsylvania north, is on the other hand, desirable for a low ground cover 2 to 3 feet high. It grows well at the seaside and under other adverse conditions. The prairie rose has a wider range than any of the other roses named above, being native from Canada to Florida and west to Wisconsin, Nebraska and Texas. It is a single variety and thrives under adverse conditions. Among the other roses mentioned in the bulletin as useful for landscape planting are the Arkansas rose, Sweet Brier, **Rosa eglanteria** or **Rosa lutea,** Dwarf Polyantha, Cabbage rose, and the Damask rose.

Soils and Fertilizers.

The roses classed in the lawn and border group are adapted to a wide range of soil conditions, and may be counted on to succeed in any but extremely heavy or very sandy soils. Many of them will do well even on such soil types. The principal essentials are thorough drainage and a plentiful supply of organic matter, with a reasonably constant water supply during the growing season. In general a soil capable of growing good garden or field crops is suitable for roses. The deeper the soil and the better the preparation at the beginning, the more satisfactory will be the results.

The best fertilizer for roses is rotted cow manure, though any other well-rotted manure or good compost will serve the purpose. Fresh manure, especially horse manure, should be avoided, though if no other manure is available it may be used with extreme care. It must not come in direct contact with the roots when planting nor should any quantity of it be used immediately beneath the plant to cut off direct connection with the subsoil and the water supply. Of the commercial fertilizers, ground bone is excellent as additional food. It will not, however, answer as a substitute for an abundant supply of compost. Cottonseed meal, where it is cheap enough, may be used as a substitute for bone. Wood ashes are sometimes a helpful addition or, when they are not available, lime and muriate of potash may be used and should be applied separately.

Start early celery, cabbage and cauliflower early this month.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

A typographical error occurred in the article of Miss Lyda M. Huyck, published in the February issue, that to those unversed would be very misleading. In the paragraph, "We will continue with our well proven net picking"—"net" should read "wet." Net picking is impossible. Wet picking means the method of harvesting now, approved by some growers, of raking on the water. This is done by taking one section at a time flooding it deep enough to float all the berries, when they can be easily and quickly scooped or raked from the vines. Larger scoops or rakes can be used—fewer berries are lost, and a great many more can be gathered in a day than with the dry raked method, making the expense of getting them far cheaper. As but few berries can be put in a crate a great many drying crates are needed to facilitate rapid drying. It is in the drying or curing of these water raked berries that the danger lies. The few who have seemingly mastered the art—and it is an art—are very strong adherents—while the objectors are so fearful of injury to the keeping quality of the berry, and so averse to moisture, they will not have a berry taken from the vine till every particle of dew even is dried off. At the present time the water-raked method is the much debated question among the Wisconsin cranberry growers.

We are pleased to note that among the twenty-eight exhibitors at the Horticultural convention at Madison, Jan., 1919, nine of them were cranberry peoeple. With the exception of E. G. Dano, of Tomah, all were from Cranmoor Station and Township.

Our Mr. E. G. Dano, of Tomah, is still a sufferer from injuries received in early January, when a passenger engine struck the buggy in which he was riding. With a broken collar bone, broken ribs, badly scratched face and neuritis developing later, he has certainly had something to endure. With the mental and physical strain over the injured, Mrs. Dano must also have endured something.

Chas. A. K. Rankin, a young cranberry grower of Corvallis, Wash., and a member of this association, was recently stationed at Pelham Bay Park, and while on leave, called and lunched with Mr. A. U. Chaney in New York city. Mr. Rankin walked out of the University of Washington into the U. S. Navy the first day of the war and has convoyed many troops, beside the ship Tuscania on her fatal voyage—while on the U. S. Steamship South Dakota.

Mr. R. C. Brown, a jeweler and optometrist of Riverhead, N. Y., is also a grower of Long Island Cranberries, with bogs at Calverton. With his check for annual dues Mr. Brown writes: "We have had personally a very successful year, due to a normally good crop, and the prevailing high prices since Thanksgiving. We still have about 50 barrels left to ship, which will be cleaned up inside of a couple weeks' time. We are getting $25.00 for some of them. We have had a long period of wonderful record prices. In the long history of our bog, and during my father's time from 1875 there have never been any such wonderful prices or returns."

It is true that never before did prices soar as they have this season. That there is still the demand and people willing to pay, shows that the Cranberry is coming into its own, and will be considered not only a luxury but a staple product.

With the passing away of Mrs. Daniel Rezin, Sr., another break is made in the ranks of the cranberry people. For more than twenty-five years Mr. and Mrs. Rezin and their three sons and one daughter have been owners and cultivators of cranberry marshes. —at one time all in Cranmoor township. Since Mr. Rezin's death in 1913 Mrs. Rezin has spent her time with her children at their marsh homes. Of late years Richard and Mrs. S. A. Warner were located at Warrens, Wis., Daniel, Jr., at Warrenton, Oregon, Robert still at Cranmoor, where, for the last three years Mrs. Rezin made her home—the greater part of this time confined to her bed, a nearly helpless but patient sufferer. Release came Sunday morning, February 9, 1919. Funeral services were held at St. John's Episcopal church in Grand Rapids, with interment at Forest Hill cemetery. The pall bearers were B. P. Clinton, Jacob Searls, M. O. Potter, A. E. Bennett, Edward Kruger and S. N. Whittlesey, all old time friends.

What of the Future?

It seemed to me as I visited around among the members at our annual convention this winter, that our State Horticultural Society shows signs of growing pains.

In most cases, State Horticultural Societies finally develop so that their activities are specially directed in some one direction, generally as commercial apple growers. There have been times when this has seemed to be the tendency of the Wisconsin society. At the past convention there was some complaint that the commercial apple men had been neglected. When one considers the diversity of interests, in fact one might say the opposing interests represented in our Society it is rather a wonder we all get on so peaceably. Consider that we have:

Commercial apple growers,
Home orchardists,
Cherry growers,
Cranberry growers,
Market gardeners,
Home gardeners,
Professional florists,
Private gardeners,
Home flower lovers,
Retail nurserymen,
Wholesale nurserymen,
Perhaps a few commission men,
Small fruit growers,
A miscellaneous collection of Professors,
Home makers,
And probably some who don't belong among any of the above.

Does it not look as though your Secretary would be puzzled to keep everybody satisfied?

To be of greatest value, we are too diversified in our general interests. Then what shall we do? Allow some one interest to predominate? That will hardly satisfy many.

The other alternative seems to be to make the state society a sort of parent association to correlate all work and keep everything going strong, with the principal interests represented in separate auxiliary societies or sections.

This idea as applied to the Wisconsin society is not original with the writer by any means. It was first brought to my mind by the talk of Dr. Fracker at our annual banquet a year ago, and the success of the Woman's Auxiliary during the past year has increased my interest.

This is but the rough presentation of the idea. I hope that those who read this will write to Mr. Cranefield expressing their opinions either for or against the plan. If there is merit in the thing, then I am sure the time is here when we must work out the practical details.

—W. A. Toole, Baraboo, Wis.

Killing Woolly Aphis on Roots.

Carbon disulphid, in solution at the rate of one-half ounce to four gallons of water and applied at the rate of three-fourths gallon per square foot of soil, will control the root form of the woolly apple aphis and without injury to the trees under suitable conditions, says the U. S. Department of Agriculture, in Bulletin 730, recently published. The solution is prepared by pouring the carbon disulphid into the water and agitating the mixture vigorously. When applied on the soil around a tree the liquid penetrates into the ground and the poison gas given off by the chemical kills the pest. Every square foot of infested soil should be subjected to the action of the solution in order to insure complete control. This may be accomplished by pouring the liquid in a shallow basin made in the soil around the tree.

In orchard practice where many trees are to be treated, the solution is best applied by using a power spraying outfit and two auxiliary tanks. The advantages of this method, according to the bulletin, are, the even diffusion of the liquid and complete aphid mortality in the soil area treated and the safety with which the disulphid can be used. The disadvantages of the method are: the huge amounts of water required, with consequent high cost of labor; the difficulty on any but level ground of preparing basins with level floors, thus insuring the proper distribution of the liquid over the area treated, and the wide area of infested roots on older trees, every square foot of which must be treated with the liquid. This last condition precludes the use of carbon disulphid except on small trees with restricted root areas.

Sodium cyanid, kerosene emulsion and deep planting of trees were other measures of control investigated, but they are not recommended by the department.

If the weather is not severe, hotbeds may be started early in March. See that they are well protected on the outside with dry straw or dry manure. Heating or wet manure freezes and takes heat from the beds.

The small, well pruned and well sprayed home orchard is worth more to the farm than the large one uncared for. Cut out the trees you can not take care of.

AMONG WISCONSIN BEEKEEPERS

The Wisconsin BeeKeepers Page
Prof. H. F. Wilson Editor

This page is to be devoted to the interests of the Wisconsin State Beekeepers' Association. Questions, notes and papers from members will be gladly received and published as space will permit. The fee for annual membership in the Wisconsin Beekeepers' Association is FIFTY CENTS. By an agreement with the Horticultural Society for 1919 this will include subscription to Wisconsin Horticulture. Send membership fee to H. F. Wilson, Secretary, Madison, Wisconsin.

The 49th Annual Convention of the National Beekeepers' Association was held at the La Salle Hotel, Chicago, Feb. 18, 19 and 20. The meetings were well attended, and those preesent had the pleasure of hearing Dr. C. C. Miller make a short speech. The main topic before the Convention was the reorganization of the National Association, and several plans were presented which are to be considered later. Dr. E. F. Phillips gave a paper on a European Foul Brood which was of vital importance to Wisconsin bee-keepers and we hope to publish this paper in our next number.

Meetings for March

A bee school will be held at Reedsville, Manitowoc Co., March 6, 7, and 8th.

The Clark County Bee Keepers' Association will meet in the M. W. A. Hall, Greenwood, March 15th at 10:00 a. m.

Our Work For 1919

By Gus. Dittmer, President

During the last year there has been considerable talk regarding the changing of our constitution so that the annual convention might be held at other places than Madison at the discretion of the executive officers. Obviously such a change as this should be considered very carefully to determine whether or not greater benefit can be derived by holding the annual convention at other places than Madison. I am of the opinion that if such an amendment is proposed that all arguments for and against its adoption should be seriously considered before making such a change. Personally, I can see no reaeson for such a change. It might be very gratifying to groups of beekeepers in different sections of the state to have the meeting held in a nearby city and possibly much wire pulling would be done by local districts to have the meetings held there regardless of the greatest benefit to the State Association. This association was organized for the sole purpose of promoting apiculture and benefiting beekeepers of the state and should not be used to satisfy the pride of individuals or single groups of individuals.

We have for many years worked hard to secure the recognition of the Legislature, the University and the State Department of Agriculture for Wisconsin apiculture. We have succeeded to some extent but as we must all agree a start has just been made and we cannot afford to lessen our efforts at this time. I believe we all realize that Wisconsin apiculture does not receive the support from the state that it should. Therefore, we must continue here at Madison where the work was started and brought to its present status until we have received a suitable recognition from the state. We must keep in touch with the Agricultural College and the State Department of Agriculture whose goodwill and support we now have and whose representatives are doing much to improve beekeeping conditions as well as helping to secure more substantial recognition from the Legislature. If meetings are wanted or needed in other localities, let the local organizations already established or to be established in the state, make their wants and desires known to the Agricultural College or Department of Agriculture and they will be taken care of. The Agricultural College and Department of Agriculture have already started to do this work with much success and satisfaction to the beekeepers of certain localities, as for instance, my own part of the state.

All of the state agricultural societies meet in annual convention at the State Capitol where they have their offices and headquarters under the auspices of the State Department of Agriculture and College of Agriculture and the industries reached by them and fostered and maintained by state appropriations amounting to hundreds of thousands of dollars. But where do the beekeepers come in and how far have we advanced as one of the state agricultural societies? About $1,500 is allowed for the suppression of foul brood and less than that for the maintenance of a state apiary and apicultural

instruction at the Agricultural College. Should we be satisfied with these results? I say, No! We must keep at it until we have impressed the Legislature and those in authority with the importance of our industry to the extent that not less than 10,000 dollars a year will be available for the suppression of foul brood until it is rooted out and certainly not less than this amount for the support of a state apiary, scientific research, apicultural instruction and extension work in the Agricultural College. I am not one of those who are afraid that my immediate territory will be over-stocked with bees, but on the contrary, I believe that during a heavy honey run, tons of honey go to waste for the lack of bees to gather the crop.

Wisconsin is today the largest dairy state in the Union, not alone because of the money spent in its interest, but because of the continued and persistent work of the dairy interests combined in a state association. There is no reason whatever why Wisconsin should not become one of the largest honey producing states in the Union, but the initial push to this end must come from the beekeepers of the state organized as local associations and centered in the state association. This organization must keep itself in touch with the state authorities and institutions at headquarters. The economic building up of the industry is not all we have to do. After we have attained a status comparable with other industries, we will have to keep at it everlastingly to hold our own. No one else will do it for us. I hope I may be permitted to make the following suggestions.

Provisions should at once be made to enable the secretary to increase the membership and the dues should be increased to $1 a year to give us a sufficient fund for carrying on the necessary work and propaganda. Our Board of Managers should have authority to devise means and plans for cooperating with the University and Department of Agriculture and to have charge of legislative work. Also to help in the establishment of local associations with the help of the University Extension Department and the funds of the Association to be used in helping to pay the Secretary for his time and expenses. There is no object gained by allowing funds to accumulate in our treasury and never knowing what to do with the money. Use it for a purpose and we certainly have a good one. Use it all rather than leave anything undone. If more is needed, we can probably make arrangements for meeting the demand. The Board of Directors should meet at once after the adjournment of the annual convention and make plans for the next year's work. This positively cannot be done in the main body of the convention or in a committee of the whole. The Board of Managers also should have power to act on important matters between conventions, to consider legislative matters and to advise with the College of Agriculture, the State Department of Agriculture and the Federal Department of Agriculture in cases of extreme need. It may be argued that such a procedure is undemocratic and is liable to put the affairs of the association in the hands of a few. This need not be, however, as our Board of Managers have nothing to do whatever with the election of officers or themselves and they cannot make any changes in our constitution or by laws.

Control of Anthracnose on Raspberries

The anthracnose disease of raspberries has caused great loss to Wisconsin growers for years, although in many cases the gradual failure and dying out of the plantations was attributed to other causes.

It is a stem disease largely, although it sometimes extends to the veins of the leaves and is sometimes called "stem-canker."

Professor Dutton of the Michigan College has carried on experiment for two years and the results show that the disease can be successfully controlled. The following are his conclusions:

"The results of these experiment shows that anthracnose on black raspberries can be satisfactorily controlled with lime-sulphur. To insure success at least three applications should be made, as follows:

First—In spring before growth starts. Use lime-sulphur diluted at the rate of 2½ gallons in 50.

Second—When new shoots are six to eight inches high. Use lime-sulphur diluted at the rate of 1¼ gallons in 50.

Third—Just before blooming period. Use lime-sulphur diluted at the rate of 1¼ gallons in 50.

Clean cultivation should be practiced. Weeds in the rows will hold moisture, making conditions favorable for anthracnose development. The bearing canes should be removed as soon as the fruit is harvested."

Most house plants root readily in a glass of water if kept in an even temperature and not in direct sunlight.

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Victory Gardens

As a reward for good behavior, no doubt, the State Council of Defense, now dead, defunct, deceased, willed the "War Garden" work to this Society.

We want to hold as much as possible of last year's gain, but we are making no patriotic appeal nor any "starving millions" appeal. We are appealing to the people of Wisconsin to help themselves by planting gardens again this year and all the years to come. By doing this we will surely help feed all who are less fortunately situated than we are.

We are to make gardens this year for the pleasure and the profit to be derived from them and that ought to be enough. There will be no difficulty in getting gardeners, practically every one who had a garden last year wants one this year, but not every lot owner who furnished land free to war gardeners is willing to do it this year.

The greatest difficulty lies in persuading the garden committees who served last year to act this year. In order to accomplish anything worth while there must be a central organization, a clearing house, through which vacant lots may be listed and assigned to applicants. Here is where our members who live in cities can help. Up to the end of February only fifteen cities of the fifty-six reporting a city garden committee in 1918 have reported an organization this year as follows: Wausau, La Crosse, Manitowoc, Marshfield, Monroe, Chippewa Falls, So. Milwaukee, Bayfield, Washburn, Menomonie, West Allis, Beloit, Superior, Kaukauna and Madison.

Members of this Society living in cities not named in this list are requested to take a hand in organizing a committee and report to this office. We have on hand a supply of the March Supplement, a manual on gardening, exactly fitted to Wisconsin conditions, and as many of these will be sent free as may be needed, but will be sent only to some committee or other body that will attend to a proper and economical distribution of them. Here is an opportunity for every member, living in a city not named above to help in promoting gardening.

The American Apple Show

Illinois apple growers held an apple show in Chicago last December. Wisconsin was asked to joint but declined, as it did not appeal to us as a "win-the-war" measure.

A meeting was held in Chicago Feb. 7th attended by representatives from twelve states and the American Apple Show Association organized. H. M. Dunlap, of Illinois, was elected president; F. Cranefield, vice president, and Prof. Laurenz Greene, of Indiana, secretary. An executive committee of five was also elected. An "all American" show will be held in Chicago, probably in November and it is up to Wisconsin growers to make plans now to win. This will be our first real opportunity since the World's Fair at St. Louis in 1904 to show Wisconsin apples at their best; the state fair is too early and winter meeting too late. The premium list will be printed in Wisconsin Horticulture as soon as announced by the executive committee.

Boost a Little

You can help your friend, you can help the Society and indirectly every one concerned in horticulture by securing a new member. Strange as it may seem to you, there are over a million people in Wisconsin who are not members and don't know of the advantages of membership. Nor do they know how simple and easy it is to acquire membership. Further many people who know something about the Society consider it an organization composed mostly of professional fruit growers, while in fact not over ten per cent are in that class, the remaining ninety per cent being amateurs. We have nearly three hundred members in Milwaukee and every one an enthusiastic gardener. So

just boost a little; do a little missionary work by telling your neighbor about the Society. If you can't conveniently do that send his name to the secretary, who will do his worst.

Constitution and By Laws Revised

One of the most important events of the annual convention was the revision of our constitution and by-laws to conform to state laws enacted since the last revision in 1909.

The constitution with a brief historical sketch of the Society is being published in pamphlet form and a copy will be mailed to every member.

We Will Keep Bees

Our family is growing; soon we will have all the good people in Wisconsin under our family roof. Here come the bee-keepers as an auxiliary society about 300 strong and many more to follow. We need the bees to pollenize our flowers, the bees need the flowers, together we ought to have a sweet time.

Pruning Fruit Trees

Orchard trees may be pruned at any time when the wood is not actually frozen, and at such times the pruner is not apt to be on the job. So far this has been an unusually mild winter and many growers have pruned their orchards. Amateurs will take notice that they may prune their fruit trees any time in March without fear of injury to the trees.

Bud Selection

The citrus growers of California are conducting experiments to test the quality of buds from especially productive and also less productive citrus fruits. There seems to be an impression that buds from trees which are good bearers will make good bearing trees. Perhaps this will apply to apples and plums.

Domesticating Our Native Wild Flowers

William Toole, Sr., Baraboo, Wis.

Why should we plant our native wild flowers in our gardens when they may be had for the gathering from our roadsides, our woodlands and marshes? We may wish to do so for reasons of sentiment, and also because of their intrinsic beauty.

These beauties of our wild lands are free to the finder but yearly they become more scarce. The green groves have passed away from many a hillside; field crops now grow where we used to gather the wild phlox and the painted cup, and farther apart are the wild ladyslipper or moccasin flower. Less frequently than formerly can we gather armsful of our Turk's Cap Lily.

I do not know just where to go in Sauk county to find the side saddle flower of the Pitcher Plant, also several of the Orchid family as Pogonia, Calipogon and the Showy Orchis. The Trailing Arbutus plant is becoming so rare here one should keep secret the knowledge of the few plants that are left.

Pleasant recollections of trips to woods and fields for nature study or for enjoyment of the surroundings, bring to us longing for the beauties we have discovered in out of the way places. We associate in our minds certain species with special surroundings or conditions, and we at first thought that wild plants should succeed only under such circumstances to which it seemed as though they were wonted. With closer observation we note that many wild plants succeed in their native way under widely varying conditions. For instance, here in Sauk county we expect to find the prairie phlox in open brush lands where the soil is lighter than what we would call sandy loam. In my collection of this phlox the choicest varieties which I have of the species were gathered in a marsh south of Madison. We find the woods phlox here only in the rich soil of the timberlands yet in Indiana, last spring, I found the two species in some instances growing together, although generally in separate localities.

Our spider lily, Tradescantia Virginiana usually colonizes in light soils, yet I have found it also thriving near marshy ground in a black peaty soil.

The showy lady slipper is described in the botany as growing in marshy ground. I have often found it but never in wet or marshy situations. While it is well to study the preferences of various plants to some extent, the prime need of most of them is a chance to grow without being crowded out with grasses and other plants. When given good garden cultivation a number of kinds of our wild plants, will thrive better than we find them doing in their native habitat. Even plants seemingly so retiring as the Hepatica and the Harebell if given a chance in cultivation, will attain to a size of plant ex-

ceeding any we find in a wild state. Some kinds are not deeply rooted and may need some artificial watering in a prolonged dry spell, but nearly all of them are satisfied with good cultivation.

I have tried to give to some plants what seemed like natural conditions in a wooded slope where the soil is good, and leaf mold abounds, but both species of Phlox, Jacob's ladder, Hepatica and others do better in the open with cultivation. The wild Turk's Cap Lily enjoys a place of its own and prefers cultivation in good soil, although it is mostly found in moist wild meadows.

Of course these native plants of various kinds should not be forgotten when not in flower, otherwise weeds will crowd them out. Some kinds show their beauty and make their growth in spring and early summer, dying down to the ground early—their places should be marked. This class includes Blood-root, Dutchman's Breeches, Green Dragon Arum, Adders Tongue, Spring Beauty.

There are but few annuals and not many biennials among our native wild flowers that are worth considering as attractive.

A convenient time to collect and transplant most of these native flowering plants is when they are in flower, as they can then be most easily identified. I have had good success in moving a number of kinds at that stage of growth. Some kinds bear moving best during the short resting spell which follows their season of blooming. This is so with the Moccasin flowers or Cypripediums, the Lillies, and I think the lupines or Sundial. I have not had good success with the Lupine and would like to try them from seed. The Badger flower Anemone pulsatilla is impatient of removal in early spring. I shall try it sometime after the seeds are ripened.

When moving these wild plants, care should be taken to secure plenty of roots which should not at any time become dry. Soil taken with the plants helps to save the roots, but when I know that I can make the roots safe I sometimes shake away the soil for convenience in packing to carry them home. With a stout trowel to dig with, and plenty of paper and baskets for packing, one can make them safe for carrying home,—just as safely as plants can be sent a long distance by express. Some kinds can be conveniently raised from seed as I have done with our native Phlox, the cardinal flower, blackeyed Susan, the compass plant and others. With seedlings there is a chance for variation and through selection one can plan for bringing out new varieties. Such opportunities are manifest in the Phloxes, Jacobs Ladder, the native Asters, black-eyed Susan, wild Lillies, Pleurisy root and others. I have derived much satisfaction from this work with some of the kinds.

In planting I would advise grouping together low growing, early flowering kinds. In this class I would list Hepatica, Spring Beauty or Claytonia, Lungwort or Mertensia, Dutchman's Breeches or Dicentra, Rue Anemone or Anemonella, Isopyrum, Wood Anemone, Jacob's Ladder, the Pasque flower, called by some the Badger flower, Dog Tooth Violet—both white and yellow, Northern Bedstraw, Blood Root, Marsh Marigold, both of our native Phloxes, wild Columbine, Yellow Puccoon, Harebell, some of the early Meadow Rues or Thalictrums, Wake Robin or Trillium, Violets in variety, Trailing Arbutus, if you can make it grow, and others which are worthy of a place with these. Those who choose to grow but few kinds would probably make a choice from this list. Individual preference might lead to choice of other kinds. Perennial plants and shrubs go well together, those who have room and choose to do so can make pleasing combinations of our native plants with shrubs.

Sometimes there is a desire for plants which will give flowers under the shade of trees. While no plants will have their best showing in such a condition, some of our natives adapt themselves to such a use. For such a purpose I recommend the white Eupatorium of White Snakeroot, Joe Pye Weed, and some of the native asters such as Novae Anglae and our native Phlox.

This paper is not written to persuade anyone to cultivate our native flowers but to encourage those who desire to do so and hesitate because of lack of experience. If the work is commenced in a small way, interest and experience are soon acquired. To be able to recognize and name our native flora with the feeling that they are familiar acquaintances adds much to the joys of outdoor life. I would urge anyone to not assume an appearance of pride in not being able to remember botanical names. To forget names should be tolerated in old people but is not helpful to the young. When I came to Wisconsin sixty years ago next spring I soon noticed that there was a wide range of flora differing from those with which I had become familiar in Rhode Island. Of course I wished to know the

names and learned that the same common name might be applied to a number of different species. There were pinks without end, bunch pinks, squaw pinks, prairie pinks, Indian pinks and some that have got away from my recollection. Blue bells and Mayflowers were applied indiscriminately, and there were snake root and snake weed without rest.

Wood's Class Book of Botany introduced me to a large class of acquaintances and a world of satisfaction. The hard names are not troublesome but the habit the botanists have of changing old established names is disconcerting. Most people have accepted a number of botanical names as a matter of course. Why not acquire knowledge of enough names to make the list of value in identifying such as should be old acquaintances.

Notes on Muskmelon Culture

By N. A. Rasmussen

For early melons start plants under glass; for the main crop plant seeds in the open ground. For Wisconsin markets one-half the acreage should be early melons. For the early crop plant seeds in hotbed four to six weeks in advance of time when plants may be safely set in open ground which, in central and southern Wisconsin, is about June 1st.

Use "dirt-bands" for plants instead of sod. Soil for seedlings should be rich in plant food and very light in texture.

Bands 3 x 3 inches should be used and may be either of wood or paper. Plant four to six seeds in each band and remove all but two plants when transplanting.

Plants should not be transplanted until the second pair of true or "rough" leaves appear. Set four by five feet in the field,—one or not more than two plants to a hill. Great care should be used in transplanting so as to avoid loosening the soil about the roots.. The holes should be dug in advance of planting; slip the band into the hole and by pushing down with the thumbs, retaining hold on bottom of band with the fingers the plants may be removed from the band without disturbance of the roots.

Cultivation in the field is the same as for cucumbers. The soil should be light in texture, soil that will not bake under ordinary conditions, and of course must be well drained. Light, sandy soil will produce earlier melons than heavy soil, but the quality is not as good. Milwaukee Market is one of the most profitable varieties to grow.

The Plant Disease Situation in the State

By R. E. Vaughan

In reviewing the plant disease situation in Wisconsin for the season of 1918 three things stand out prominently: 1. The general good health of our crop; 2. The intensive surveys that have been made for diseases of grains and potatoes; 3. The splendid cooperation in the work between the United States Department of Agriculture, the state agricultural department, and the plant pathology department and extension service of the University. With 180 million people facing starvation as a result of the great war we can be very thankful that Wisconsin is in a position to do her bit in "keeping the wolf from the door" of our Allies. Probably small amounts of our important horticultural crops will actually be shipped across the ocean, but they will play a part in releasing other food and in keeping up the morale and health of the home folks.

"An apple a day
Keeps the doctor away."

Remedies for the control of plant disease can only be intelligently applied when the nature and causes of the various diseases are known and the locations where the diseases in question are of economic importance. Thanks to the researches of Professor Jones, Dr. Keitt, and others we are accumulating a fundamental knowledge of the nature and causes of such diseases as cabbage yellows and cherry leaf spot or "shot hole". Dr. Walker is aiding the onion growers in solving their problems and Messrs. McKinney and Richards are actively engaged with experiments on potato scab and Rhizoctonia.

During the summer of 1918 members of the plant pathology department traveled many hundred miles in the state observing the condition of the apples and cherries, potatoes, cabbage, and onion, and cereals of all kinds. Whenever possible, advantage was taken of the county agents and emergency food agents because of their intimate knowledge of the plant disease condition in the counties.

The Plant Disease Survey of the U. S. Department of Agriculture stationed a field agent, Professor Wright, in Wisconsin from July 1 to September 28 for the particular purpose of detecting the first evidence of any outbreak of late blight on potato. All other crop diseases were also reported upon by Mr. Wright. On August 13 a field showing a field of late blight

was found near Rice Lake, Barron county, and later several other fields were found in the vicinity. Through the able work and leadership of County Agent Cuff, Barron was well supplied with sprayers and spray material, and, when the warning was sounded, all the spray machines were hauled out and put to work. The results at digging were:

	Sprayed % rot	Unsprayed % rot
High ground	5	35
Low ground	18	50

Thorough spraying with Bordeaux mixture held the blight in check until the frosts of September killed the vines and the danger from blight was over.

The injury to potatoes caused by frosting is of much greater importance than it is usually considered. It is a matter of common knowledge that when potatoes are frozen solid they become soft upon thawing and are known to the trade as "leakers". However, when a potato is slightly chilled, a few degrees below the freezing point, there is no external visible indication of damage. It is only when such potatoes are cut open that the result of chilling is observed. They may show dark lines in the region of the vascular ring beneath the skin or a net work of discolored strands in the flesh. The discoloration is always more marked at the stem end than at the eye end of the tuber.

Cabbage diseases always claim considerable attention from the plant pathology department and I am pleased to say that the yellow disease, which a few years ago threatened to ruin the cabbage growing industry in the lake shore region of Racine and Kenosha Counties, is now practically under control through the use of the specially selected strain, Wisconsin Hollander. There is approximately a thousand pounds of this seed available for 1919. Mr. W. J. Hansche, Route 4, Racine, handles this seed as he did last year.

Cabbage black leg, a fungus disease, has been found more serious this year than in any previous season when this crop has been under observation. Virulent attacks have been made on fields of Wisconsin Hollander as well as other strains and varieties. Some fields of Hollander and domestic cabbage were nearly worthless. Black leg came the nearest to producing an epidemic of any plant disease that was observed in 1918. The fungus causing black leg lives over with the seed and on old stumps and leaves so that two avenues of control should be considered (1) sound seed, disinfected; (2) rotation of seed bed and field. Seed treatment will not be an absolute guarantee against black leg because some of the fungus threads may get down under the seed coats into the very heart of the seed beyond the reach of any disinfectant. Formaldehyde solution, 1 oz. to 2 gal of water, for 20 minutes has been recommended for cabbage seed treatment, but does not prove quite as satisfactory as corrosive sublimate 1:1000 which can easily be made up in small quantities from tablets obtainable at any drug store. There is, however, a very great promise of being able to use heat in disinfecting cabbage and other seeds according to preliminary results of experiments now in progress.

The use of the formaldehyde drip attachment on onion seeders was again successfully demonstrated in fields south of Racine.

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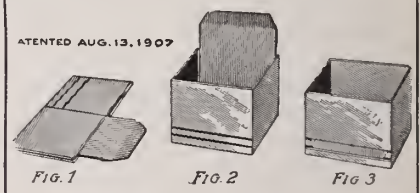

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Mr. Piper, one of the large growers, arranged two 30-gallon tanks on his large 2-horse 6-row machine and treated over 40 acres. He was so thoroughly convinced of the value of this treatment that he left no check rows for comparison. However, we do know that a full crop was harvested this year from fields that in 1917 gave from half to two-thirds of a crop because of smut. In a field where the smut trouble was very severe check rows were left untreated. These gave 186 bushels to the acre while the field treated went 681 bushels, a gain of 495 bushels.

In addition to the extensive survey work that was carried on last year as a result of the cooperative relations established with the U. S. Department of Agriculture, there is now stationed at Madison in connection with the plant pathology department a branch laboratory of the Office of Cereal Investigation. Dr. A. G. Johnson of our department has been placed in charge of all the investigations on cereal diseases caused by fungi of the ascus and imperfecti groups. Furthermore, the U. S. Department of Agriculture, Office of Cotton, Truck, and Forage Crop Investigations, has detailed to our laboratory Dr. F. R. Jones, who is continuing investigations on pea blight, and Dr. J. C. Walker, who is devoting his time to finding ways and means of better controling cabbage and onion troubles.

Cooperation, working together, is an important reason why Wisconsin is so widely and favorably known in the field of plant disease control and there is every indication that future results will equal if not surpass those that have been recorded.

Pruning and Spraying Bush Fruits

T. H. Kiethly, Indiana

The systematic pruning of the bush fruits, especially of currants and gooseberries is very often neglected, yet it is just as important that they be pruned regularly and to some fixed system as it is that the grape, for instance, be so treated.

One should have some definite system of pruning each species of bush fruit and the choice of system must depend upon certain conditions, such as the fruiting habit of the plants, the manner of training, the location of the plantation, the variety one is growing, etc. No system, however practical it may be, can be applied in an ironclad way to all varieties of a class nor to all bushes of a certain variety, but must be intelligently varied to meet the case in hand. I shall tell briefly of some of the systems we have found practical in our work.

The pruning of currants and gooseberries can all be done at one time in late winter or early spring. They both produce most of their fruit on the laterals on canes older than one year and on fruit spurs on these canes, hence the same system of pruning applies to them both. We first remove all canes over four years of age. Then head in all lateral shoots that have made a vigorous growth. We take off 2 to 4 inches from a growth of ten to twelve inches. We rarely head in any laterals on the four year canes. We then remove all but three or four of the one year canes or whips and head them back to about 2 feet in height. This makes for a short bushy cane that will not drop over

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when laden with fruit. Lastly we go around the bush and trim off any growths that trail down. When the bush is pruned it has three or four canes one year old, three or four two years old, three or four three years old and three or four four years old, but none over four years of age. Occasionally this system has to be varied to meet the varying conditions of seasons, etc., but always we have new wood coming on and old wood being taken out.

The raspberries all produce their fruit on one year canes that bear only once and die that autumn. Each spring one or more leafy shoots arise from the crown of each black raspberry bush. These we tip back or pinch out the growing tip from two to two and a half feet high. If allowed to grow tall and then cut back to this height a weak, lateral growth results, but when nipped at the right stage several strong laterals will be thrown out and will greatly increase the fruiting surface. One often has to go over the black caps three or four times to get these shoots at the proper height. Before growth starts in the spring we prune the lateral growths of the young canes to from eight to fourteen inches in length and then with a pruning hook remove all the dead canes that bore the past season's crop of fruit and enough of the weaker young canes so that no bud has more than four or five canes on it. When we transplant black raspberries we trim off all the old wood as near to the bud as possible so as not to spread disease.

The blackberry should be pruned about as I have outlined for the black raspberry, except where supports are used for the canes, the shoots need not be nipped in the summer.

The shoots of the ordinary red raspberry should not be nipped in the summer, but if one is dealing with the drooping purple canes, as Shaffer and Columbian, the nippining should be done the same as for black caps. The young canes of the red raspberry should be headed in in the spring before growth starts at from three to four feet. All old dead canes and weak young ones should be removed at the same time.

Now as to the spraying, all bush fruits should receive a good, thorough coating of winter strength lime sulphur applied late in the spring just as the leaf buds are bursting open. Even if some of the leaves are commencing to unfold we have never noticed any spray injury. The later it can be applied without injury the more good it does. We have found that this winter spray controls the anthracnose of the black raspberry better than any other thing we have tried. It also holds the San Jose scale in check on the currants and saves as a general clean up for many fungous troubles. When the leaves on the currant and gooseberries approach a quarter of a dollar in size we spray with arsenate of lead for the currant worms, and repeat in about ten days. This gets them before they get a start and they rarely bother us. If you wait till you see them to spray, you are apt to find them about as hard to stop as a forest fire. Before the war caused copper sulphate to soar in price we always combined bordeaux with the arsenate of lead for these summer sprayings for the currants and gooseberries and never had any serious loss from leaf blight or from gooseberry mildew. Two years ago we decided because of the high price of copper sulphate to use summer strength lime sulphur, one gal. to 40, with the arsenate instead of the bordeaux. So far the past two years we used no bordeaux. This we found to be a false economy and as direct result we had to grub out as fine a patch of Red Cross currants as one would care to see. They had been ruined by leaf blight. In our opinion had we stuck to Bordeaux we would still have those bushes. In some localities the currant louse or aphis gives trouble. The best spray for this is Nicotine sulphate and can be applied as a combined spray or separately. These lice work on the under surface of the leaves and as the spray must hit them in order to kill one must use an angle nozzle. Fortunately we have never had a bad infestation of these aphids, although we

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have had enough to see what damage they could do if they appeared in numbers.

It looks now as though the market would be very keen for all kinds of berries for the next few years and I believe we will all be repaid for extra effort in spraying and pruning these crops.

The Grain Rust Campaign and the Horticulturist

By S. B. Fracker

One of the big effects of the war was the realization it brought to America of the importance of food. Our problem had always been how to dispose of farm products instead of how to raise them. This condition had been rapidly changing in recent decades, but so quietly had over-production given place to under-production that the new situation was scarcely realized. Even in 1914 the brewery interests, for example, were advertising the number of millions of bushels of grain they were using without benefit to the consumer.

The sudden realization of a world food shortage which came with the outbreak of war caused a marshalling of every force to prevent any possible waste. It was necessary to stop losses in production as well as waste in consumption. When it was realized

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that a reduction in the wheat crop of 1916 from 1,025,000,000 bushels, the 1915 figures, to 636,000,000 bushels had taken place, largely through the effect of a single preventible plant disease, the necessity of heroic measures was apparent.

Black stem rust of grain had been the cause of many serious losses to wheat, oats, barley, and rye crops now and then for decades. The most remarkable feature of these conditions was the fact that the remedy had been known for many generations. Two centuries ago farmers discovered that black rust did untold injury in fields adjoining barberry hedges. At the time of the Revolutionary war Massachusetts prohibited the planting of the common barberry but seems never to have enforced the statute. In 1865 it was definitely proven that the barberry rust was the same as that on grain.

It may seem strange under these circumstances that these bushes were imported so persistently into the United States. They originated in Asia, but the berries proved popular in Europe and were brought into America by the early settlers. In Wisconsin they arrived by 1840 and sixty years ago were well established in Dane, Walworth, Winnebago, Manitowoc, Brown, Sauk, La Crosse, Trempealeau and other counties.

The question of a campaign of eradication was becoming insistent three years ago after excellent results had followed similar action in European countries. Denmark led the war and has not had a rust epidemic since the common barberries were destroyed. Many other countries followed suit. The United States last year, becoming the granary of the world, could not afford to lose a fourth of its entire grain crop from a preventible disease and began an eradication campaign.

The experiment station, and the state federal departments of agriculture joined hands. Thousands of copies of educational articles were published and reams of mimeograph letters were sent out. Park boards, state institutions and public officials set the example and owners of large estates rapidly fell in line: In Wisconsin over a hundred thousand sources of grain rust infection had been destroyed by the time the buds burst in the spring.

In twelve places in the state barberries had escaped from their usual locations around houses and been carried by birds into the woods. In nine of these places all have been destroyed and progress has been made in the others. There are possibly other counties in which the barberries are numerous in the woods but such conditions are not proving as difficult to handle as was anticipated.

The horticultural society can help during the coming season even more than during the past. The conspicuous and easily found plants have been taken out, but isolated and missed ones remain. Members can be of greatest assistance by notifying the department of any tall barberry bushes found especially along country roads. This campaign will be continued until not a shrub of the dangerous kind remains.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, April, 1919 | Number 8

Mertensia virginica: It's common name is Lungwort. In spite of this it is a charming spring flower. Look for Mertensia late in April on the margins of shady woods.

La Societe Nationale d'Horticulture De France

In every large town in France there is a Horticultural Society which owns public gardens and holds annual exhibitions. By far the largest and most important of these is the National Horticultural Society of France.

The national organization was founded in Paris in 1827 and called at that time the Horticultural Society of Paris. This name was later changed to the one it now bears. The original membership consisted of 400 members which increased to 4,000 by 1900. Soon after organization the Society began the publication of a Journal which has appeared regularly since that time. By 1852 the work of the Society had become so valuable that it was declared a public utility. A building was purchased, numero 84 rue Grenalle, which contains several large assembly rooms, small exhibition rooms, offices, etc.

The organization has many interests and activities. Its work is divided among the following bureaus, each one being a separate and complete unit: fruit culture, vegetable growing, floriculture, orchids, ornamental trees, landscape gardening, horticultural industries, roses, chrysanthemum culture, chrysanthemum flowers and scientific studies.

The work of the last mentioned department is interesting and important. It deals with research and the spread of facts relative to lands whose fertility has been little exploited, transportation and the relation of the horticulturist to the inspector. It also deals with cooperation, mutual insurance against accident and the loss of animals and agricultural credits.

The society itself, however, devotes its main efforts to the problems of fruit, flower and vegetable culture. They hold two meetings each month, and once each month they have a seasonable exhibit. These exhibits are very profitable and are given considerable prominence in horticultural literature. In the spring and fall large exhibitions are given in magnificant greenhouses which are considered to be of great importance to the horticulturist. These exhibitions are open to the public and are very popular with all of Paris.

Besides the Journal of the Society which is published monthly bulletins upon subjects of special interest are also published. Each year the best varieties of chrysanthemums are listed and described and given publicity. In 1906 a valuable and comprehensive book entitled "The best fruits of the beginning of the 20th century," was published. The data for this publication was carefully collected and arranged according to the climate, the soil, and growers and according to the purpose for which the varieties were used. This publication was declared a very valuable work by the government.

The Society maintains a registry for new varieties. This is open to non-members as well as members. Blanks are furnished the grower or producer of the new variety, which are to be filled in with the necessary details of the history of the plant and the chief characteristics of the variety. These blanks together with the plant are presented for exhibition, providing the plant can be moved. If the plant is too large for such exhibition, a committee examines and classifies it where grown. Such new plants or varieties are officially registered and the originator own all rights according to French law. All new varieties are published in the Journal of the Society and in other Horticultural publications.

The Society owns a tract of land just outside of Paris on which it was planned to start a school for orphans who wish to become gardeners. The war has seriously interfered with this work.

A complete account of the achievements of the Society is impossible for the official organ Le Journal de la Societe Nationale d' Horticulture de France, together with a list of the membership is not received by the University. This literature is kept on file at Washington. Great prominence is given to the Society by the Revue Horticole. The names of the officers of the Society appear as officers in other Horticultural Societies of note.

The national Society established the Union Commerciale Horticole which is a kind of labor union and mutual aid society, whose work is very practical. Through the efforts of the Society a Horticultural Federation was organized of all the Societies in France. The president, M. Viger, was made President of the Federation.

The Society carries on a great deal of educational work. Prizes are offered for gardens and for articles on horticultural subjects.

Before the war the Society agitated gardens for working men. M. Viger asserts that according to statistics alcoholism was reduced one third in places where gardens were provided for workingmen. In the annals of the Society of

French Agriculture, we find him asking for cooperation in this line.

During the war the Paris building of the Society was given over for Red Cross work. Although the reports are very meager for this period, it appears that the Society cooperated with the Government in aiding and encouraging all gardeners to produce food.

The National Society is the horticultural authority in France. It acts as the spokesman for the horticultural people of France in all matters pertaining to their interest both domestic and foreign.

Translated and edited by Mrs. F. C. Bauer, Madison.

Plant Raspberries and Strawberries.

It is not too late to plant raspberries and strawberries. Gardeners and even farmers who are situated so they can engage in a side line without detriment to their other farming interests can do no better than to plant an acre or more of berries this spring. I use the qualifying term "EVEN farmers" deliberately because it is the policy of the State Horticultural Society to discourage farmers from engaging in any kind of side line because the side line is apt to be neglected in favor of the main line.

Further, commercial fruit growing involves two lines of business, growing and marketing and the marketing of fruit is more complex than the marketing of farm products.

The "cash crop" farmer who has 20 to 40 acres not more than 5 miles from a shipping point and the market gardener are the ones who should plant berries now. Also, the man with a larger farm who is willing to let his boy or girl try something besides straight farming should also be interested.

We are down to rock bottom in the berry business in Wisconsin and this is a mighty fine time to start. It is unlikely that Wisconsin will furnish one-half of the berries needed on Wisconsin markets this year, with the result that high prices will be paid for inferior fruit, for berries shipped long distances are sure to be inferior. And prices should hold good for years, in fact there is no danger whatever that there will ever again be the slump in prices below the cost of production which occurred in this state twenty years ago. We now have better means of distribution and marketing is now well organized. The canning of fruits has also been improved and the demand for canned products far exceeds the supply. The writer is in receipt of two inquiries from parties who want to establish factories for canning berries. In other words the business has been stabelized so there need be no fear of loss.

Now is the golden time to plant both strawberries and raspberries. It is not too late in the season to do it. The offer of the State Horticultural to send a practical grower to any place, on the application of six or more persons who are interested, for a conference still holds. Our standing offer to answer questions on this or any other horticultural subject also holds.

Write to the Secretary, Madison.

—F. Cranefield in Wisconsin Agriculturist.

Cabbages Galore.

Appleton, Mar. 4, 1919.—The last two carloads of cabbage to be loaded in this city have been sent on their way. The total number of cars loaded at the local yards during the season was 240, each car averaging fifteen tons. The total number of tons was 3,600, for which $72,000 was paid. Appleton is only one of several shipping points in the county. It is estimated that Outagamie county farmers were paid more than a half million dollars for their last year's cabbage crop.

Not all of us can have a good rose garden, but there are few who have any garden space that can not have a good peony or gladiolus garden. Both furnish flowers for all purposes.

Do not leave seedlings in the seed box to become crowded. Transplant as soon as large enough to handle, if you would have good plants.

Hydrangea Hills of Snow is one of the best of shrubs for home planting because of its long season of bloom and freedom from insects.

Scabiosa, gaillardia, calendula and candytuft are all good annuals for decorating purposes. Sow liberally of them all this year.

Large, plump seeds give better results than small seeds. This is especially true of garden seeds.

Start a few gladioli and dahlias in pots or berry boxes now. They will bloom early.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Before our 1919 annual meeting a request was sent the American Cranberry Exchange for their experience with, and ideas of ventilated packages in comparison with the almost universal use of the tight barrel container for shipping and sale purposes.

Mr. A. U. Chaney responded with a very full and explicit paper giving results of a variety of containers experimented with by the exchange and individual growers, from which we make some quotations.

"The *barrel* is still the most popular package, and will be for a great many years to come. The trade are prejudiced in favor of the barrel, and it will be many years indeed before any other package is substituted therefor successfully. It is a convenient package to handle, and a good shipping package, and good, sound, healthy cranberries keep very well in the barrel when properly packed.

A half-barrel box we have tried out to a considerable extent this season, and have found it to be the most practical package of any yet tried, outside of the barrel. It is a splendid shipping package, and seems to be a good re-sale package. It makes a very good show in the retail store. It is a box that is almost square and is ventilated. We have found that juicy berries, over-ripe berries, and tender berries carry considerably better in this package, and keep dry longer than in the barrel, and, as far as I could see, have carried as well as in any smaller box or crate, and it being a better re-sale package than any other package we have tried, we are about to recommend this as being generally adopted. This box holds 50 lbs. net of cleaned berries. A sample box is being forwarded for inspection." * * * From this article an impression was made on some of the growers that the use of this box was advocated to take the place of the barrel package. In reply to this supposition Mr. Chaney writes:

"There is no idea of ever discontinuing the barrel. The half-barrel box was not offered as a substitute for the barrel. It was only offered for a package in which to ship berries that should be shipped in the chaff, and particularly a package in which to ship water-raked berries, or very tender and poor keeping berries. We have found by experience that chaff berries do not keep as well in barrels as they do in boxes because they do not get the ventilation and where berries are shipped to Chicago or some other point for a long hold in storage, it is safer, and far better to ship them in ventilated boxes. This half-barrel box has proved an ideal box for that proposition.

"For years to come, there will be only a limited demand sold in boxes, tho this is a very desirable retail package. 75 to 85%, at least, will be sold in the barrels. Do not think there will be any call that is worth mentioning for good, sound keeping berries for direct shipment in any package other than the barrel. There are now a good many berries shipped to Chicago in the chaff—a good many water-raked or frosted berries that are very poor keeping berries shipped to Chicago for immediate sale—these, when shipped in barrels sometimes go down very quickly, and if shipped in this ventilated box they would stand up very much better.

"For any grower who is unfortunate enough to have that kind of berries, or for any grower who desires to hold berries, especially for late storage, the half-barrel, ventilated box would be the proper package to use. We do not want to give up the barrel—neither will the trade give up the barrel, and I hope the growers did not get the idea that we wanted to give up the barrel. If the half-barrel box with good berries in it was used for direct sale, we would have to charge enough premium to cover the extra cost of labor and the extra cost of the package itself."

With a demand for and where obtainable, $30.00 per barrel being paid, are any of us wishing we had held some of our cranberries for this before unattainable figure?

Here is a question from one of our New Jersey members.—"Are your people troubled by 'scum' or algae growth in parts of their bogs when the water is taken off in the spring? Information as to how to combat it would be of interest. Also the use of bees on bogs."

If any of our readers are troubled with same condition on bogs in springtime, and have any remedy to offer, it would be appreciated if they would immediately make it known to the secre-

tary. Also experience or benefit from bees. An instance was cited in one of the 1918 issues where it was thought bees were accountable for a larger setting of berries than would have resulted otherwise. They are pollen carriers we know.

The E. P. Arpin family were recently made happy by the safe return of their son, Captain Edmund Arpin, who entered the service in the early stage of the war. Capt. Arpin was one of the few survivors of his regiment in one of the great battles "over there."

Word from Chas. A. K. Rankin tells of his release from service and entry again into civil life. Happy the day when peace and safety reign and our boys once more in their home circles.

Cranberry marshes are still dormant. Though we have had a wonderfully mild winter for Wisconsin, with ice now disappearing from the Wisconsin River and smaller streams. Marshes in the Cranmoor district are still so solidly frozen that at this time, late in March, teams can be easily driven over them.

Referring to last year, one of our eastern growers writes as follows: "It has been a hard year for me as for many others, but I am glad to have paid expenses to January 1, tho I shall not to the end of my fiscal year. The high prices now to be had for cranberries (if one has any) did not benefit me for mine were sold early, mostly before the sugar embargo was raised. In fact we kept the mails hot in importuning the Food Administration to allow the sale of half a pound of sugar with each quart of cranberries. I think probably we did help to get the first allowance, but probably the signing of the armistice effected the later one. I was thankful that I could sell all of my fruit on the reputation of my brand, but it would have been practical ruin for many small growers if the market had not improved."

The above experience is true of most cranberry growers last year. With the extremely high prices of it seemed almost hazardous to har- it seemed almost hazardous to harvest a berry. The feeling is one of thankfulness that we were saved from heavy losses, even tho the producers generally were not benefitted by the later high prices.

How to Control the Onion Thrips.

The onion thrips is an insect so small that it is almost invisible to the unaided eye, but it is prolific, and the most serious menace to the onion-growing industry of this country. It causes an annual loss to this crop alone estimated by specialists of the U. S. Department of Agriculture to be at least $2,250,000. Though the insect has a particular liking for onions, it preys upon other garden and truck crops, such as cabbage, cauliflower, cucumbers and melons, and also has a ravenous appetite for greenhouse and many ornamental plants, particularly roses. To aid growers in identifying this insect and preventing the losses for which it is responsible, Farmers' Bulletin 1007, "Control of Onion Thrips," has recently been published by the U. S. Department of Agriculture. The first indication that an onion field has been attacked by thrips, says the bulletin, is shown by the leaves, which become whitened. In advanced attacks the leaves are curled, crinkled and twisted, and finally die down permanently. To control this pest, begin spraying with nicotine sulphate solution as soon as there is any evidence of the insect. If spraying is delayed until hundreds of young thrips are present the crop will be seriously injured. The spray material is made by the following formula: 3/8 pint of nicotine sulphate (40%), 4 pounds of dissolved soap, and 50 gallons of water. Spraying should be done thoroughly and applied as a fine mist.

It is not advisable to plant other crops, such as early cabbage and cauliflower, upon which the thrips feed, near the onion fields. After onions, cabbage and related crops are harvested, the field should be cleaned up to destroy any breeding places of the insect. They will continue to thrive on any portion of these plants or weeds that might remain in the field. It is a good practice to plow as deeply as possible and harrow the ground after harvest. Much of the injury can be avoided by planting as early as possible and by using quick-acting fertilizers after the onions are well set or the bulbs have begun to form. Onion fields should be watched constantly and the plants should be kept growing thriftily, since once the plants become checked in their growth from any cause the thrips will multiply more rapidly than ever and it will be a hard fight to save the crop.

Sage, dill, and other herbs are easily grown in the garden.

AMONG WISCONSIN BEEKEEPERS

The Wisconsin BeeKeepers Page
Prof. H. F. Wilson Editor

500 State Members by December 1.

We now have 245 paid and 84 unpaid members in the State Association. There are 155 now members in the Affiliated Associations. *Secure a new member every day.*

Please Pay Your Dues.

We are mailing Wisconsin Horticulture this month to about 75 members of the Beekeepers Association whose dues are not paid for 1919. These names will be dropped from our list unless fees are paid before next mailing date, May 6th. Send your dues to the proper officer of your Association who will clear your record in this office. Do not send to me.

Frederic Cranefield,
Sec. W. S. H. S.

State Fair Notes

Brother Gus Dittmer is to be Superintendent of the Bee and Honey Exhibit at the State Fair this year and he asks that every member of the Association help in making a big display. A new item is to be added for the boys and girls, $5, $3, and $2 for the best display of extracted honey, and similar prizes for the best display of comb honey. Any boy or girl between the ages of 10 and 18 can enter. Write for a premium list.

Warning

Do not buy used combs or bee equipment from apiaries where bees have died out. Have a competent person look over all colonies of bees before buying. *You may buy foul brood.*

The proposed new bee law, Senate Bill 66, carrying an appropriation of $5,000 and introduced by Senator Dennhardt of Oshkosh has passed the senate and is soon to come up in the assembly. *Have you seen your assemblyman?*

Pack your bees in fall and spring. The farmer builds the best he knows how, to protect his stock from cold. Why not do the same for the bees. It may be some trouble and extra expense but the increased production will more than pay for it. The better the protection the stronger the colonies. Strong colonies prevent European foul brood. European foul brood usually appears in the second hatching of brood and is at its worst in May. Plenty of stores and good warm hives protected from the wind will help the bees to rear sufficient brood to overcome the disease before it gets started.

Meetings for March. A Bee School with an attendance of over 200 people was held at Reedsville, March 6, 7 and 8, in cooperation with the North East Wisconsin Beekeepers' Association.

A meeting of the Fox River Valley Beekeepers' Association was held at Appleton, March 21, to talk over the summer work and to buy supplies for the season. Arrangements for a summer field meet were made and also for a bee school in December.

Through the efforts of Mr. Klofanda, County Agent of Calumet county, a meeting of Calumet county beekeepers was held at Hilbert, March 22. Illustrated lectures on bee and bee diseases were given and a plan of organization for the county talked over. A trip among the beekeepers of the county was planned for June 5 and 6 and a field meet and picnic will be held at some convenient place on the seventh.

Two men have applied to this office for apiary jobs for next season. Any beekeeper needing help should write for information.

Spray Schedule for Apple Trees

Wisconsin farmers are beginning to realize that spraying is necessary to grow good fruit. Many, however, do not know what materials to use or how to use them. If the growers will follow carefully the plan as given below better fruit will result which will amply repay the cost of application of spray.

What to spray for. The plum curculio and the codling moth are the two worst insect pests of the apple. The lesser apple worm and green fruit worms although of minor importance add to the amount of unmarketable fruit in the unsprayed orchard. Plant diseases also affect the quality quantity of fruit grown if proper spraying is neglected.

When to spray and materials to use. First spray—applied just as the flower buds separate in the

clusters showing pink. Use powdered arsenate of lead 1½ pounds to 50 gallons of water. For plant diseases (scab) add lime sulphur 5 quarts to 50 gallons of the above spray.

Second spray—spray just after the petals fall and before the calyx cup closes. Use arsenate of lead 1 pound to 50 gallons, adding 5 quarts of lime sulphur for scab.

Third spray—applied two weeks after the second, using the same materials.

Fourth spray—this spray should be applied 60 to 65 days after the third application or about the 5th to the 15th of August. Use same spray as in 2 and 3. (If weather is rather hot and sunny, Bordeaux mixture 4-4-50 formula should be substituted for lime sulfur.)

In spraying plums and cherries apply only the first three sprays.

Spraying Fruit Trees in Bloom

Is it necessary to spray fruit trees in bloom? The fruit grower should cooperate with the beekeeper in the spraying of his trees and should not spray them during the blooming period except under very unusual conditions. The results are apt to be as detrimental to the fruit grower as to the beekeeper. There has been considerable discussion as to whether or not bees secure poison which may have settled in the flowers. However, until this is definitely proven, it is safer to work on the basis that bees may be poisoned in this way Bees and other insects are of the greatest importance is cross fertilization and we have for several years know that this is not only necessary for some plants but desirable for plants that are self-fertile. Fruit growers should therefore plan not to spray their trees until after the petals have fallen.

Protect Early Cabbage and Cauliflower Against Root Maggots.

L. G. Gentner.
Agricultural College.

Every year early cabbage and cauliflower beds, especially in the southern half of the state are seriously injured by the whitish root maggots which burrow in the roots of the plants. Cauliflower is as a rule, more seriously injured than cabbage and often entire plantings are wiped out. It is sometimes necessary to replant cabbage two and three times. Infested plants which are not killed outright are usually dwarfed and sickly.

Protect your plants by placing tarred felt discs around the stems of the plants as they are being set out and pressing them down against the soil so that they lie flat The discs prevent the adult flies from laying the eggs from which the maggots hatch. They are of no help after the maggots have once begun to work in the roots. Infested plants should be dug up and destroyed. All stumps and refuse should be gathered and destroyed as soon as the crop is harvested and the ground plowed deeply.

The discs may be made by hand with a tool made for the purpose, or they may be bought from Smith Brothers, Green Bay, Wisconsin, at 20c per pound (160 to the pound) or from the Plant Protector Company, Rochester, N. Y. at $2 per thousand. *Order the tarred felt discs now* so that they may be on hand when the plants are transplanted.

Cabbage Injured by Striped Flea Beetle .

L. G. Gentner.
Agricultural College.

In some parts of the state these tiny striped flea beetles cause very serious injury to cabbage seedlings in the seed bed. Sometimes from 25 to 65% of the seedlings are either killed or made unfit for transplanting, and it becomes necessary to ship in plants.

Control Measures.—Flea-beetles are not readily controlled by poisons but may be kept off of the plants by thoroughly spraying these with Bordeaux mixture which is made up as follows: 4 ounces bluestone, 4 ounces quicklime, 12 quarts water. Dissolve the bluestone in a wooden or earthenware vessel, using hot water, and then add water to make 6 quarts. Slake the lime by adding water a little at a time. When slaked make up to 6 quarts. Pour the two solutions together through a strainer while stirring and the spray is then ready to apply. Sometimes a combination of Bordeaux mixture and lead arsenate is used.

At times the flea-beetles attack the seedlings as soon as they begin to push through the soil. In such cases sprays seem to be of little value and the only thing that can be recommended where this occurs year after year is to grow the seedlings under a cheesecloth screen to keep out the insects and remove this as soon as the beetles begin to disappear so as to harden up the plants.

The best of garden seed is the cheapest in the long run. Demand seed not of low cost but of high quality.

Wisconsin Horticulture

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FREDERIC CRANEFIELD, Editor.
Secretary W. S. H. S., Madison, Wis.

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Remit by Postal or Express Money Order. A dollar bill may be sent safely if wrapped or attached to a card, and pays for two years. Personal checks accepted.

Postage stamps not accepted.

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Pay Promptly

Don't let your membership lapse if you want a copy of the 1919 Annual Report which will be issued within a few weeks. The Report this year is just a little better than ever and no member can afford to be without it. Much time has been spent on revising the lists of recommended trees and plants and the spray calendar. When you receive a notice that your membership has expired take action because nothing whatever happens after that except the simple little act of removing your name from the mailing list, unless you send fifty cents. A dollar pays for two years.

PLANT A TREE IN FRANCE

It is well that Dante died so soon for had he lived until 1914 he would have suffered deep humiliation. His splendid imagery, his superb portrayal of the devil and his cohorts have been far outclassed by William Hohenzollern and his Huns.

When early in the Great War we heard rumors of the fiendish, atrocious, bestial acts committed by the German army in Belgium, acts it appeared, not merely tolerated but premediated and executed according to a definite plan, when we heard of the killing of thousands of defenseless civilians, old men and women and children and the mutilation of others we were dazed and many were incredulous. When the rumors of these acts of savagery were substantiated a shudder of horror spread through the whole civilized world.

When later this horde of savages, which had spread over northern France were compelled to retreat the civilized world believing that the very utmost limits of depravity had been reached by Germany were to be undeceived. The great factories were looted, all movable machinery sent to Germany and the balance destroyed. This mainly concerned the factory workers and owners but the farmers and fruit growers were not to be spared. *Every fruit tree and vine was destroyed*, every well poisoned and every house and barn leveled to the ground. No, the fruit growers were not to escape. Agricultural as well as industrial France was to be destroyed and the French made to understand once and for all time that no being so insignificant as a Frenchman should oppose this infinitely superior race so well fitted to rule the world. As a demonstration of "kultur" and fitness to rule Germany destroyed the fruit trees and vines of invaded France as well as the homes of the fruit growers.

An Appeal

The horticulturists of France, through their national Society, have appealed to the horticulturists of Wisconsin for help. Shall we fail them? As citizens of Wisconsin and the Nation we have responded liberally to every appeal for help from stricken Belgium and France but here is a chance to help the growers of fruits and flowers who are in deep adversity.

Within a few weeks our fruit trees will be loaded with bloom and then with ripened fruit. There will be no apple blossoms in Northern France this year, only withered branches and the stumps of trees. Soon the lilac and the syringa will brighten our lawns with their clusters of fragrant flowers but no flowers will bloom about the heaps of ruins that were once the homes of happy people who loved fruits and flowers even as we do. Will you help them?

Whatever we give will be expended as we indicate so let us "Plant a Tree in France." Seventy-five cents will plant a tree. **How many** will you plant? Send your contributions to Secretary Cranefield, Madison, Wis., who will forward them to the National Horticultural society of France whose officers send the following appeal:

SOCIETE NATIONALE D'HORTICULTURE

DE FRANCE

February 1919.

DEAR SIR,

We beg to inform you that the Société Nationale d'Horticulture de France has decided in its meeting of the 12th of December to open a subscription in favour of all those who, *at the horticultural point of view*, have been victims to the invasion and who have suffered material damages owing to the war.

La Société Nationale d'Horticulture de France sends you its most earnest entreaties, and hopes that you will be kind enough to help it in its work, by informing the members of your Association of the decision which has been taken and by collecting the subscriptions which will enable it to answer to the urgent needs which have already been pointed out to it.

The beautiful industrial solidarity which has always been shown clearly in the French Horticulture as well as in the International one in painful circumstances must not fail when it comes to make up for such terrible ruins.

We beg you to receive, dear Sir, with our best thanks, our kindest regards.

Le 1er Vice-Président de la Société,
Président de la Commission,
ABEL CHATENAY.

Le Président de la Société,
VIGER.

March, 1919

Receipt of contributions will be promptly acknowledged by this office and names of contributors forwarded with the money. A further suitable acknowledgement will be sent later.

Frederic Cranefield,
Madison, Wis.

I want to plant (—) fruit tree(s) in Devastated France and enclose ....., which please forward to the National Horticultural Society of France.

.....,

To Frederic Cranefield, Secretary W. S. H. S.
Madison, Wis.

THE HIDEOUS RETREAT

The Huns were retreating sullenly from the Aisne. French refugees were flock'ng wistfully back to what were once their homes. French soldiers, on leave from the front, were trudging forward on fearful pilgrimages through charred roads and pulverized villages to see what was left of their farms.

The Boche has done hideous things. Only those who have anxiously watched their own things grow can fully understand. The Hun had cut down everything he could see, even the lilac bushes—only what was in the ground, alive, they could not kill—according to a vivid report in Collier's Weekly.

One soldier was amazed to find his grape-vines standing. They were budding. He reached tenderly for one of the rough brown stems. It stirred oddly. The sweat broke out on his forehead. For twelve years he had patiently cultivated these vines. He took hold of the lower stem. It had been severed from the root with a fine vineyard saw, and its sap was oozing from the stump. For three years he had fought the Hun in the trenches. But he had never known that there were people in the world who could do this cold, calculated harm to a grape-vine.—*From Fourth Liberty Loan Poster, 1918.*

Americans the Best Gardeners

Much has been said concerning the remarkable results secured by gardening conducted along intensive lines. The French gardener, in fact, has been held up as the last word in this particular line of effort. The Oshkosh Northwestern says:

"Frequently it has been urged that the people of this country should study and adopt French methods, in order to secure better results from the gardens cultivated in this land. Now, however, comes a surprising report that some of the war gardens which have been operated by Americans in France have been made to produce even better results than similar gardens conducted by the native French gardeners. The Americans, in other words, actually have beat the French gardeners at their own game—which is the usual result when the energetic and resourceful Americans seriously set themselves to accomplish any given task.

"The report of this accomplishment is gratifying and also promising. It is a matter of satisfaction to know that clever Americans are able to hold their own in a competitive test of this character, while their success furnishes the intimation that when they come home they will be able to duplicate in American gardens the records they have made in France. Moreover, by setting an example along this line they will stimulate a general desire and effort by other gardeners in this country to im-

prove methods of cultivation, thereby to secure better results in producing food. Unquestionably the Americans who have been abroad have learned a good many useful and valuable things—information that will be of lasting advantage to them and to the rest of the American people. It has been a school of liberal education for American soldiers and other workers, and the entire nation will profit from this experience."

Effect on Lime-Sulphur of Freezing.

A member asks how freezing affects lime sulphur. The question was referred to Prof. Geo. F. Potter who answers as follows:

Freezing appears to have a variable effect upon lime sulphur. I have frozen two samples of the same lime sulphur in the same freezing chamber at the same time, with the result that one sample would be utterly spoiled, while the other one was entirely uninjured. When the lime sulphur is spoiled by freezing, the sulphur which is in solution is precipitated out and falls to the bottom of the container in a finely divided form. The solution loses its rich dark color which is due to sulphur in solution. The injury is detected by the change in color in the solution and the presence of sulphur particles in the bottom of the container.

If a part of the sulphur is precipitated out, the solution is weakened. It would not harm the trees but might fail to do its work properly.

Considerable apprehension has been shown by Horticulturists and in Horticultural literature concerning the use of lime sulphur which has been frozen but in which precipitation which I just mentioned, did not occur. I believe that there are no grounds whatever for this apprehension, because freezing cannot change the sulphur into any form which would be more injurious to the plant than the form in which it is originally dissolved.

THE AMERICAN POMOLOGICAL SOCIETY

A Call for Recruits.

"Its object shall be the advancement of the science of pomology," is the declaration of the Constitution. It shall exist "for the purpose of promoting and encouraging the culture of fruit," states the Act of Incorporation under the laws of the Commonwealth of Massachusetts. In the call issued by Marshall P. Wilder nearly three-quarters of a century ago, delegates were requested from "all agricultural, horticultural, pomological and kindred societies in the United States and the Canadas," and the object of the Association was declared to be "to promote pomology and the sciences upon which it depends;" and delegates were requested "to bring with them specimens of the fruits of their respective district." The last retiring president, Professor Hutt, in 1917, declared that the Society "is the clearing house for advanced pomological ideas, and the supreme court on varieties, nomenclature and pomological ethics."

These statements are broad enough to cover a continent, free enough for a democracy, interesting enough for every lover of fruits. Note that the word fruit is not defined; so is the society flexible, and able to adapt itself to the needs of each generation.

A long and honorable history is one of the safeguards of the Society. It was organized in 1848, seventy years ago. It has had a continuous history. No other similar society is so old. Its membership has carried many honorable names from the first. Its reports are important practical guides and indispensable historical records. Its word has always been authority. The Society has a proud record.

At first the purpose of the Society was distinct and clear. Recently its place or mission has been obscure; so many subjects and interests have needed attention that its energies were in danger of becoming diluted and confused. Now, however, its field is clear again because other societies have been organized to cover certain industries. The recently established Congress of Horticulture will take care of the commercial and legislative phases. The Society for Horticultural Science represents what may be called the professional aspects, those specially interesting to science men in the government and the institutions. The American Pomological Society may now return to its original simple function to promote and encourage the production of fruit.

It Speakes to the Lover of Fruits.

To the real amateur, to the lover of fruits, the American Pomological Society makes its appeal. To thousands of persons in all parts of the United States and Canada, in country and city and suburb, the Society comes with help and encouragement,—to the one who has but a small patch of berries, a little vineyard, a few trees of pleasant fruits or nuts, a little grove of oranges, specimen trees of persimmons or avocados, or of plants transferred experimentally from the wild. To the naturalist who searches for fruits in wood and fields the Society also offers itself, and to investigators anywhere who bear enthusiasms for their work with fruits.

Equally does the Society welcome the commercial grower, however large his plantations; it will appeal to him primarily in his amateur or fruit-loving interests. Many of the enthusiastic amateurs are also large and forceful growers for profit.

All this means that the Society makes its primary appeal to the human interests attached to the growing of fruits. Its membership, therefore, should be many thousands rather than many hundreds. It retains for itself its original field of amateur fruit-growing and also of systematic pomology (with the fascinating subjects of varieties and nomenclature), as well as the scientific aspects that appeal to those who like fruits just because they are fruits.

Many plans are under way to make the old Society useful to all these people in the provinces and states. It is hoped that a regular exchange of specimens and scions may be arranged with all the membership, being organized through the secretary's office so that proper inspection may be safeguarded. There should also be a regular publication going to the membership. A wide and intimate correspondence should be developed. The experience of the entire country should be made available. All this requires a secretary giving his entire time to the work, and this depends on a large membership.

The Secretary will send you this letter, together with instructions for joining the Society. I trust it will seem good to you to attach yourself to it.

L. H. BAILEY,
President.

(The membership fee, two dollars, should be sent to E. S. Lake, Secretary, 2033 Park Road, Washington, D. C.).

An English gardener says that salsify or vegetable oyster sprouts that come up from plants left in the garden over winter may be cooked and used like asparagus if they are not allowed to grow more than six inches tall.

Purchase and plant more perennials in the flower garden and borders this year. They return each year with little work.

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No. 85 "More Wheat."
No. 87 "Let Us Help You to Study Farming."
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For information as to application, write

The Barrett Company

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AGRICULTURAL DEPARTMENT

For information on gardening, time to plant, distance apart to set plants, kinds to buy and a thousand and one other useful hints on gardening consult the February Supplement. If by any mischance you failed to receive a copy or need an extra one send for it. Thirty thousand copies have been distributed free so far but there is still a supply for all who ask for a single copy. Supplies for schools and city garden committees must be limited as the Society lacks funds for a reprint.

How to Propagate Roses

The propagation of roses for one's own use is an essential part of the work of the home rose gardener if he would reduce expenses and add a new interest to rose growing.

The plants are propagated from seed, by hardwood cuttings, softwood cuttings, layers, budding, and grafting. The rose species used as shrubs, such as the Rugosa, Carolina, Prairie, and Wichuraiana, are propagated by root sprouts and the others named by hardwood cuttings. The Wichuraiana is naturally a trailing plant which takes root near any eye. By cutting rooted stems into pieces so that each one has some roots and an eye each one will make a plant.

Climbing roses are mostly propagated by hardwood cuttings. Cut-flower roses are grown from hardwood cuttings, greenwood or softwood cuttings, and by budding or grafting.

Hardwood cuttings are taken from the dormant wood of winter, while softwood, or greenwood cuttings are taken when the plants are in active growth. To make a hardwood cutting, good, strong, well-ripened shoots of the past summer's growth should be selected. These are better if cut between the time the leaves fall and freezing weather. If left until cold weather there is danger of injury from freezing. They should be cut into pieces of 5 or 6 inches, with the upper cut just above a bud, and should be tied in bundles with raffia or with string that does not rot easily if exposed to dampness. After labeling plainly they should be buried in moist sand, tops down, and placed in a cool cellar or buried in the open ground below danger of frost. They should be planted in the open ground in the spring about or a little before corn-planting time, so that one or two eyes, or not over one inch of the cutting, is above the ground, which will leave 4 or 5 inches in the ground. Care must be taken not to injure the calluses that have formed while the cuttings were buried. Sometimes better results are obtained by planting in partial shade.

Frequently cuttings made in winter or early spring do nearly as well as those made in the fall, but in the north there is always danger of the wood being injured during the winter.

Softwood, or greenwood, cuttings are made soon after blooming from wood of the current year's growth. This may be taken from the stems that have grown roses or those that have not. There are claims that it makes a difference which sort of shoot is used, but good, strong shoots are the most important consideration. These should be cut to three eyes. All the leaves should be removed except the top one, and all the leaflets should be removed from this except parts of two. These cuttings may or may not be made with a "heel," which in this sense is a piece of older wood at the bottom of the cutting. The cuttings should be planted at once in light loamy soil or in sand in a bed where the atmosphere may be inclosed. A coldframe or spent hotbed is a suitable place if the glass is shaded or a cheesecloth frame is used instead of the sash. For a few cuttings many people have success by inverting over them a fruit jar or a glass dish. The cuttings, however, need to be shielded from the direct rays of the sun when under glass, to prevent

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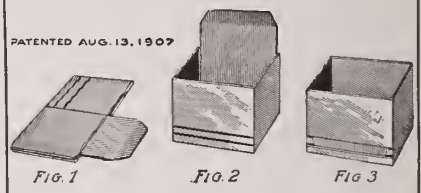

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burning. The object of the inclosed atmosphere is to prevent undue evaporation from the leaves before roots have formed sufficiently to support the plant. When roots have freely formed, the plants should be transplanted to good soil, watered well, and shaded for a few days from the midday sun. Subsequent watering should be moderate until they are well established.

Budding and grafting are not necessary in order to get satisfactory results in growing roses either about the farm home or on the city lot.

Planting and Caring for Cut-Flower Roses

In deciding the time to plant cut-flower roses, say specialists of the U. S. Department of Agriculture, the gardener must take into consideration the kind of plant, the location, and to a certain extent, the season. The roses may be obtained either as dormant or potted plants. It is best to use the former. If budded or grafted roses are used they must be planted deeper than own-rooted roses would be, because of the liability of shoots starting from the stock below the scion, the point of union between the stock and scion should be planted 3 inches under the ground. By planting in this way the scion will have an opportunity to form roots from the part of the stem in the ground and thus become at least partially own rooted. Planting the stock so deeply discourages the formation of new shoots from it. If any appear they must be removed at once.

Hybrid perpetual roses should be set from 2 to 3 feet apart, depending on the vigor of growth and the locality. When the greatest mass of bloom is wanted the vigorous ones had better be 3 feet apart.

Tea roses should be planted from 18 to 30 inches apart, depending on the vigor of growth and proposed treatment.

The hybrid tea roses have a greater range of character of growth even than the other kinds discussed, and the proper distance for planting corresponds. The planting distance is from 20 inches to 3 feet, being greatest in the warmer regions where they get an abundance of water and least where they are retarded in growth by cold winters or dry summers.

The China and Bourbon roses should be planted about as far apart as the hybrid perpetuals.

Cultivation

One of the special requirements of cut-flower roses is cultivation. They should, therefore, have the ground in which they are planted entirely to themselves to facilitate frequent stirring of the surface. Cultivation should begin early and continue until within six weeks of the dormant season. The first spring cultivation should be deep enough to work into the soil the winter mulch of manure or a good special application of manure if there is no mulch. The later cultivations should be just deep enough to maintain a surface dust mulch.

Pruning

The quality of the blossoms produced as cut-flower roses can be controlled largely by pruning. For the production of individual

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blossoms of greatest perfection, as well as to secure a succession of bloom, severe pruning must be practiced. When a large number of blooms of small size is the aim, the pruning is less severe. Where the greatest amount of bloom is desired, without regard to the size or quality of the individual flowers, the least pruning is done.

When dormant roses are planted in the spring they should be pruned at the time of planting, leaving only two or three stems with four or five eyes on each. This will leave them 6 inches or less in length. After the first year, pruning should be done as soon as freezing weather is over. All weak wood and crossing branches should be removed every year. For fine specimen blooms on hybrid perpetuals the remaining shoots should be shortened to four or five eyes. For the greatest mass of bloom only one-third to one-half the length of the shoots should be cut away.

In regions where cold sometimes injures roses, teas and their hybrids should be trimmed later than the other classes, or about the time growth starts. They should be trimmed in the same manner as the hybrid perpetuals. China, Bengal, and most roses should be treated the same as the teas and hybrid teas, except that it is not desirable to cut them quite so closely. Bourbon roses should have only half the length of the shoots removed. Summer pruning is desirable.

A special type of pruning should be practiced in fall in sections where winter protection is necessary. Under such circumstances it is desirable to cut back the tops in the fall to within 30 inches of the ground to allow of more easily covering the bushes. This should be followed in the spring by the regular pruning. The long stems left in this fall pruning help hold the winter mulch from blowing away and from packing too closely. They are also long enough to allow considerable winterkilling and yet have sufficient eyes left to insure ample growth for the next season's bloom.

Protection and Special Care

In the northern half of the country, cut-flower roses need winter protection. This may be provided by coarse manure, straw, or leaves applied after the preparatory pruning already described. Evergreen boughs, or even branches from deciduous plants, are often helpful in holding the other materials in place, besides being a protection in themselves. Individual specimens are often wrapped in straw and burlap. There is some danger of trouble from mice in the use of straw and strawy manure, especially during hard winters. this is minimized by banking earth about the plants before mulching. This banking of earth is also a most effective preventive of injury from cold. Earth banked up about the plants to a height of a foot or more makes an excellent protection, especially if covered well with manure after the ground first freeze. The earth cover must be promptly removed in early spring, as soon as danger from freezing is past. In some sections it is advisable to protect cut-flower rose plants from strong winds by shrubbery borders, evergreens, vine-covered fences, or other windbreaks

Paris Green and Insecticides

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The Planting of Rural Home Grounds.

A. Martini.

It is a pleasure to note the interest that is being taken by the rural communities in the beautifying of the home grounds. While there is scarcely a homestead without its trees, shrubs and flowers, the effects produced with the same materials are vastly different.

The planning and planting of the rural home grounds for beautiful effect mostly involves some sacrifices. Often we notice too many trees obstructing the views of surrounding landscapes and again we notice a lack of trees.

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Now no one knows better than the private gardener how hard it is often to convince the owner of a homestead of the benefit derived from the removal of one or more ill-placed trees, and around the farm house, I take it, such trees are often left standing because of some sentiment that may be connected with them, but if ill-placed there is no more reason why they should remain as there is a reason for an ill-placed picture remaining on the walls of the home, and every woman knows that a picture or pictures on the walls will look better in one place than in another, and in order to produce harmony must hang "just so!"

If we find that we have too many trees or trees, of the wrong character we must make sacrifices and dig them out, and do some more digging if we have no trees at all. Carolina poplars and Cottonwood of all kinds are undesirable trees for the home grounds, while they are quick growing they shed too many leaves all summer and keep the place littered up continually and so give it an untidy appearance. I might mention however, the Lombard poplar, with its spire-like top and trim shape as a possible exception.

Spruce, Pine and other Conifers never look well if used in mixed planting, but when Conifers are used exclusively and in large masses most beautiful effects can be created. The lawn should always be open. Arrange the shrubbery in solid clusters or borders with irregular outline along the sides of the lot and a few properly selected shrubs placed directly against the house will enhance its appearance by breaking the sharp outlines. When arranging for planting we must take into consideration: the exposure, sun or shade, and should select shrubs with regard to their flowers and berries, also their autumn foliage, their size, time of flowering and their hardiness. Shrubs with yellow foliage never look well, always appear to be sickly. Shrubs that succeed in the shade are the different privets, barberries, bush honeysuckles, snowberries, mock orange or syringa, hardy hydrangeas and then we have the hardy ferns for shady places. In grouping shrubbery borders one can always make a better show by planting a solid mass of one kind in a given place, adjoining, if the the border is long enough, with another variety of several plants. Spiraea Van Houtiis you all know is adapted for many purposes, and whether used for hedge planting, grouping or as individual specimen plants it should be found on every place the same as the high bush cranberry, a variety of snowball with flat clusters of white flowers and beautiful brilliant red berries that remain all winter, as the birds will not touch them. Then we have the snowberries, the Indian and also the flowering currant, the bush honeysuckles, the beautiful weigelias, and the lilacs that make effective back grounds for smaller shrubs. A few well placed cut leaf sumachs always give a touch of refinement to any shrubbery. But it is not necessarily the number of varieties that go to make successful ornamental plantings, it is the way they are placed that brings out the tasty arrangement.

SUPPLEMENT
Wisconsin Horticulture

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INSECT AND PLANT DISEASE CONTROL

The purpose of this Supplement is to outline the methods used by orchard owners whose trees pay for themselves every year. The statement made recently by the manager of one of the big cherry orchards of the state that "two-thirds of the cherry orchards in this country do not have a crop worth the cost of picking and never will have under the present management while the other third pay big dividends," is equally true of the apple orchards of Wisconsin. Now is the time to decide that this year's crop will be a paying instead of a losing venture.

For the convenience of the many members of the Horticultural Society who possess home gardens, a brief discussion of the ordinary insecticides and fungicides is also being given. Every attempt is made to keep the recommendations up to the latest results of the experiment station and the most profitable practice of successful Wisconsin orchardists.

Apple Spraying Program

I. When the fruit buds show pink, spray with:

Lime-sulphur (commercial concentrated)	1½ gal.
Arsenate of lead (dry, powdered)	1½ lbs.
Cold water	50 gals.

Note: See also the discussion of Bordeaux mixture in another column.

II. About a week after the petals fall, spray with the same solution.

III. Seven to ten days later repeat this spray.

IV. During the first ten days of August repeat again. The lime sulphur may be omitted from this last application.

Fifty gallons of the solution given is sufficient for eight very large trees, a dozen medium size, or about twenty just coming into bearing.

The program given will not control *plant lice*. If these aphids are found on the buds half a pint of 40% nicotine sulphate is added to each fifty gallons of the spraying solution when the pink bud spray is applied.

This spraying program is primarily designed to protect apples from the codling moth, plum curculio, and apple scab but is also effective in controlling most other bud and fruit-infesting, or leaf-eating insects as well as certain plant diseases. The strong *dormant spray* recommended for early spring application in many states is usually not necessary in Wisconsin. It is not recommended unless the orchard owner knows oyster shell scale or San Jose' is present on his trees.

Fruit that Pays

By S. B. Fracker.

Wisconsin's orchard trees are ready to bear a million bushels of apples in 1919. After an "off season" they are prepared to come back and do their share toward satisfying fruit-hungry America. With the kind permission of the weather man, several hundred thousand barrels of fruit will be hanging on the trees in a few weeks.

Whether this apple crop will pay the cost of handling is the question uppermost in the mind of the average owner. Is the fruit going to be fit for market and will there be a market for fit fruit? A few successful orchardists know their season will be profitable, because it *always* is, but to many of the readers of this supplement the apple crop ap-

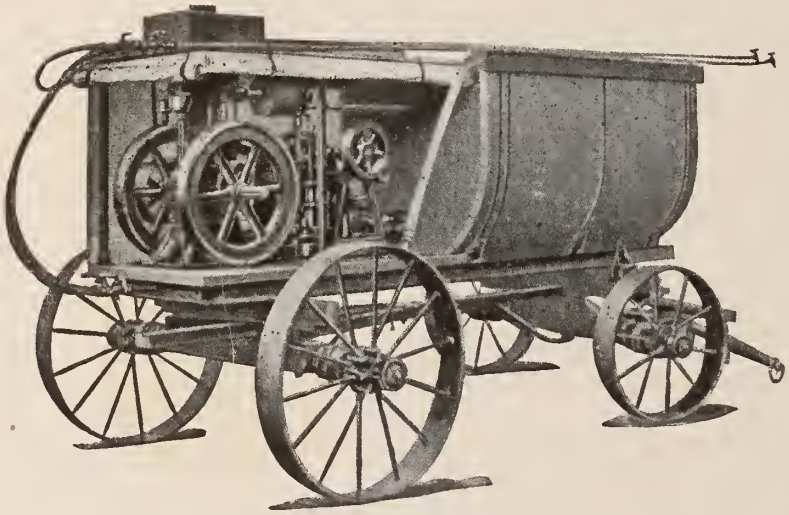
Plums and Cherries

The program for plums and cherries is very similar to that for apples. The same formula (lime-sulphur and arsenate of lead) is applied, (1st) when the petals fall; (2nd) about two weeks later; and, if necessary, (3rd) just after cherry picking. As with apples Bordeaux mixture is sometimes preferred to lime-sulphur on account of the stronger fungicidal effect.

40% nicotine sulphate may be added to either of these sprays on account of aphids or plant lice.

Outfit Needed

For fruit trees one of three types of spray pumps is usually employed, depending on the number of trees to be sprayed. These are bucket, barrel, or power. The owner may purchase whichever of these styles fits his purse and his orchard. With any of them there will be needed for large trees of bearing age thirty to fifty feet of five-ply rubber hose, extension rod, preferably eight feet long, fitted with cut-off, nozzle of the disk type, and angle, so that the spray may be directed downwards.



A complete, up-to-date spray outfit. Rigs of this type are used in all large commercial orchards.

INSECTICIDES FOR CHEWING INSECTS

Arsenate of Lead

Formula (1)—For orchard.

Arsenate of lead—dry, powdered	1½ to 2 lbs.
Water	50 gals.

Note. If the paste form of arsenate of lead is preferred, use twice as much.

Formula (2)—For Home Garden Sprayer.

Arsenate of lead—dry, powdered	½ oz.
Water (preferably soapy)	1 gal.

pears to be a gamble, and often a losing one.

The question, "Will *your* apples be 'Fancy,' 'B Grade' or 'Culls' when the returns come in this fall," can be answered within eight weeks, for the time to insure high quality fruit is in the early spring. The few fine sunny days of April and May are worth a hundred dollars a day to the owner of a five-acre orchard and only a small percent of the owners are cashing in on them.

The difference between high grade apples selling for two dollars a bushel, and worth it, and "Culls," selling at forty or fifty cents a bushel, and not worth that, is due almost entirely to three things: apple scab, plum curculio, and codling moth. Textbooks and treatises list many insects and diseases of the apple but none need cause alarm in Wisconsin if these three are kept under control. Fire blight and plant lice are occasionally serious but the three great factors in the production of fruit that pays are those named.

Spraying

The remarkable feature of a control program for the three big pests is its simplicity and cheapness. It requires only two spray materials, lime-sulphur and arsenate of lead, altho the stronger fungicide, Bordeaux mixture, may be used, if desired. Both lime-sulphur and lead arsenate are purchased ready for use and are mixed with cold water. The elaborate utensils and great vats for boiling lime-sulphur figured in spraying discussions of a few years ago are no longer employed, for lime-sulphur is now seldom made at home.

A few years ago one of the best known growers of alfalfa in Wisconsin decided to make the apple

Formula (3)—For Home Garden Sifter

Arsenate of lead—dry, powdered	1 lb.
Air slaked lime	3 lbs.

Arsenate of lead has practically superseded Paris green for all spraying except for potato beetles. Use it for caterpillars, worms, and slugs, on cabbage, currant, and gooseberry bushes, roses and other plants.

Calcium Arsenate

This is a new insecticide which is being used to some extent in place of arsenate of lead. About half as much of the pure calcium arsenate is required as is needed of arsenate of lead. Much of this product on the market is impure and needs to be used with freshly slaked lime to prevent foliage injury.

Paris Green

1. Formula for Potato beetle (Commercial potato fields).

Paris Green	4 oz. to 1 lb.
Fresh unslaked lime	1 to 3 lbs.
Water	50 gals.

2. Formula for Potato beetle (Home Sprayer)

Paris Green	1 teaspoonful
Fresh unslaked lime	2 teaspoonfuls
Water	1 gallon

3. Formula for Potato beetle (Sifter)

Paris Green	1 lb.
Plaster of Paris or air-slaked lime	3 lbs.

Paris green is not recommended for general spraying on account of foliage injury but if well applied is sometimes preferred against the Colorado Potato Beetle on account of its strength.

Hellebore

If you wait so long before destroying currant and gooseberry worms and similar insects on fruits and vegetables that there is danger in applying poison use fresh hellebore, one ounce in three gallons of water, or apply it dry. It is non-poisonous to higher animals.

INSECTICIDES FOR SUCKING INSECTS

Tobacco Solutions

Forty per cent nicotine sulphate is by far the most satisfactory contact insecticide for plant lice. The most common form on the market may now be secured from most seed dealers and many drug stores and dealers in spray pumps.

Formula for Commercial Orchard

40% nicotine sulphate	½ pint
Soap	2 pounds
Water	50 gallons

trees on his place pay for their lodging. After a short investigation resulting in the discovery that the difference between profitable and unprofitable orchards depended on a few days spraying, he purchased a spray pump and used it, according to the best advice he could obtain. He was no horticulturist but found spraying directions more simple than he had expected and the returns even greater. His two seasons' experience have converted him to spraying and pruning for the farm orchard on account of the dividends he has received from them.

Many a successful orchard is sprayed with only a barrel outfit.

Every owner of a small orchard can do as well. Apples make a good food for hogs but are not profitable used in that way. If it were possible to learn the number of thousands of bushels of fruit wasted in Wisconsin every year the figures would be an eye-opener to the food conservationist.

One of the subjects on the Farmers Institute programs the past winter has been, "Why buy apples? Better sell 'em." Thousands of orchard owners can easily make their trees an asset instead of a liability just as many hun-

Formula for Home Garden.

40% nicotine sulphate ..... 1 teaspoonful
Soapy Water ..... 1 gallon

Kerosene Emulsion

Kerosene emulsion is not recommended owing to the danger of burning the foliage. If nicotine preparation cannot be secured it may be used against plant lice.

Make the *stock solution* as follows: Dissolve ½ pound hard soap in 1 gallon boiling water. While still boiling hot add 2 gallons kerosene. With a small sprayer, pump the mixture back into itself until a creamy mass results. Set aside until cold.

Spray after the pink of the bloom begins to show, from that time until the bloom is entirely out or rather until the first (central) flower of the cluster is out. This is our first spray.—Dunlap.

Then spray immediately after the first bloom falls.—Dunlap.

Two other applications are made later in the season.

If pure kerosene has not separated from the mixture after standing, dilute for spraying by adding 10 gallons water to each gallon of stock solution.

Lime Sulfur

When scale insects cover the bark of orchard trees, they may be killed by using commercial concentrated lime-sulfur solution in the proportion of one gallon to eight gallons of water. This spray must be used *on dormant trees only.*

FUNGICIDES FOR PLANT DISEASES

Lime-sulfur

Formula

Lime-sulfur (commercial concentrated) ..... 1½ gal
Water .....50 gal.

dred acres of apples and cherries have already been made profitable. The details of the spraying used are given in another column of this supplement.

Apple Grading

Standardization is the slogan of reconstruction days. The benefits and value of standardized fruit have been so well demonstrated by the success of western orchards that eastern states are engaged in a race to pass standardization laws. The present session of the Wisconsin legislature will undoubtedly see provision made for the grading of all horticultural and agricultural products, the only dispute being on the detailed administration of the measure.

Spraying and apple grading brought dividends last year to all those who took advantage of their opportunities. The difference between the cost of raising culls and high grade apples is less than ten

This product has largely taken the place of Bordeaux mixture in spraying against apple scab and cherry shot-hole fungus because it does not russet the fruit and is much easier to handle. It is not as powerful a fungicide as Bordeaux but, when used before midsummer, there is not as great a risk of injury. When apple scab is very severe in an orchard season after season, Bordeaux is preferable.

One company is now producing a dry lime-sulfur of satisfactory quality. The "soluble sulfur" compounds on the market have not been as efficient as lime-sulfur solution. Lime-sulfur in the dry form is usually much more expensive than the concentrated solution.

Bordeaux Mixture

Copper sulphate in combination with fresh lime forms the standard and well known fungicide, Bordeaux mixture.

Various formulas are quoted, but the following is now accepted as safe and reliable:

Copper sulfate	4 lbs.
Fresh lime	5 lbs.
Water	50 gals.

In general terms, the copper sulfate should be dissolved in one-half of the water, the lime slaked in the remainder and the two solutions poured together. This results in a chemical action giving rise to a new substance preserving the fungicidal properties of the copper sulfate and if properly made will not injure foliage.

Bordeaux mixture is used as a preventive of apple scab, asparagus rust, mildew on grapes, roses and other plants, potato blight and rot, shot-hole fungus on plum and cherry and other fungous diseases.

The two ingredients of Bordeaux mixture may be kept separate in solution without deterioration but they rapidly lose their value after mixing. Mix only as much Bordeaux as you will use in any one day.

Helpful Hints for Making a Barrel of Bordeaux Mixture

(1) Have on hand three barrels and two pails (wood fiber or galvanized iron).

(2) Twenty-five gallons of water in each of the barrels.

(3) Dissolve 4 pounds of copper sulfate in one barrel by suspending in a coarse burlap as near the surface of the water as possible; in this way it will dissolve in a short time,while if allowed to settle to the bottom it would require several hours to dissolve.

(4) Place the lime in a pail and slake by adding water slowly until a paste is formed. (The lime for Bordeaux mixture should be slaked exactly as for building purposes.)

(5) Pour this lime paste into the second barrel and stir thoroughly.

(6) Add the required amount of arsenate of lead to the lime water.

(7) Now pour into a third (empty) barrel first a pailful of the copper sulfate solution, then a pailful of the lime water, or better, let two persons work at the job, pouring together.

cents a bushel but seventy-five cents to a dollar a bushel has been the difference in the return during the past two years. An unknown grower has simply to say, "I have so many barrels of apples, Standard A grade, minimum size 2½ inches," and his market is ready.

The apple grading law permits any kind of apples to be placed on the market. It requires no changes in methods of handling

A bucket pump is satisfactory for a few trees if sufficient hose and an extension rod are used.

the crop and does not compel an improvement in quality. But it does permit the man who raises high quality fruit to collect the value of his apples instead of selling them at a low quality price.

Last fall was the first season the statute was enforced but it was found that already there was a good market for "Standard A" apples from unknown growers without sending samples or having to accept a minimum return.

The law fixes three grades and carefully defines them. The highest is "Wisconsin Standard Fancy" which only a few orchardists will try to handle. It is for the

(8) The resultant mixture should be of an intense blue color. If any tinge of green appears it is not good Bordeaux mixture.

(9) The lime water should be strained to remove the coarse particles which serve to clog the nozzles in spraying.

(10) Sufficient lime must be used to combine with all of the sulfate or harm will result. The formula given above provides an excess, but such excess is preferable to a slight deficiency. Use all of the lime water.

Three Things to Avoid in Making Bordeaux Mixture

(1) Do not use iron or steel vessels for the sulphate or Bordeaux. Not only will these be corroded but the chemical action resulting from

Bamboo extension rod—an essential part of any orchard-spraying outfit.

continued contact may injuriously affect the mixture. Tinned or galvanized pails are safe if new or if the tin or zinc coating is intact.

(2) Do not dissolve the sulphate and lime each in 2 to 4 gallons of water and then mix the concentrated solutions; curdling will result and after dilution difficulty will be experienced in keeping the Bordeaux in suspension.

(3) Do not fail to stir the ingredients while mixing and the resultant mixture when spraying.

The Use of Stock Solutions in Preparing Bordeaux Mixture

If more than one barrel of Bordeaux is required much time may be saved by using stock solutions.

Dissolve 50 pounds, for example, of copper sulfate in 50 gallons of water by suspending in a coarse sack as advised above; slake 50 pounds of lime in another vessel and dilute to 50 gallons; four gallons from the sulfate solution and five gallons from the lime solution will then contain the requisite amount of ingredients for one barrel of Bordeaux.

Such stock solutions may be kept indefinitely if covered, otherwise the evaporation of water from the sulfate solution would result in a more concentrated mixture and the lime would deteriorate. The lime may be covered with water.

This method of using stock solutions is now employed in all extensive spraying operations. In cases where large quantities of spray material is used elevated tanks are employed from which the solution is drawn directly into the spray barrel or tank.

Prepared Bordeaux

For the home garden this is the only satisfactory fungicide on the market for the control of mildew on grapes and roses, and potato blight. Use as directed on the container.

Bordeaux mixture (without an arsenical poison) will not kill insects. It is for plant diseases only unless mixed with arsenate of lead or calcium arsenate.

use of fruit stands and the restaurant trade. In brief, apples in this grade are highly colored, perfect, unblemished fruit, and they are also graded to size, the contents of a barrel not varying more than half an inch in diameter.

"Standard A" apples are partly colored, almost perfect fruit. Every orchard can be made to produce this grade with a little care. No regulation as to uniformity in size is made.

There is no color requirement for "Standard B" but scabby, wormy, and misshapen fruit are not permitted in this grade.

If it is not desired to take advantage of the grading law, barrels of apples may be marked "Ungraded" and anything may be packed in them. If over 15 percent of the fruit is wormy, scabby, or misshapen, however, the word "Culls" must be added.

A brass funnel ought to be used when mixing Bordeaux, and is desirable for other spraying solutions.

Anyone familiar with raising apples anywhere in the United States knows that the only way to be sure of not having to label apples "Culls" is to spray them carefully. Two sprays, one primarily against apple scab, and the second primarily against the apple worm or codling moth, are absolutely essential, and the regular program of four sprays is the only way to be sure of success.

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Spraying for the Market Gardener

By H. F. Tompson

In The Market Grower's Journal

The spraying of vegetable crops, excepting Potatoes, is not a common practice in New England. The purpose of spraying either vegetables or fruits is usually two-fold, the control of insect pests and fungous diseases. At the present time it is everyday knowledge among fruit growers that both insects and diseases can be controlled by spraying with a combination of materials, the one an insecticide designed to kill either by stomach poison or contact; the other to protect by coating the plant with a substance which prevents the growth of the organism causing disease.

Spraying is not a universal prevention for our troubles with insects and disease. It is not pleasing that we should have to spray. In so far as we can, we should control the growth and health of our plants by good feeding and proper care.

It is no more sensible, however, to allow insects and disease to destroy crops and remove profits when a remedy is at hand than it is to fail to call the doctor and to give the proper care and medicine when one of the family is sick with scarlet fever.

During the past few seasons losses from insect pests and plant diseases have become severe. Some market gardeners have stopped growing certain crops because all profit was destroyed by insect or disease injury.

In most instances, insects and disease can be controlled. And this can be done at a cost which makes their control a matter of good business. Spraying either with an insecticide or fungicide or both combined is usually necessary to bring about this control.

As every good farmer knows, there is plowing and plowing, and hoeing and hoeing. In one case the results are poor, in the other good. If possible, this is more true with spraying and especially true with spraying vegetable crops for disease control. Thoroughness is all essential. The right mixture, applied at the right times, with the right equipment, with sufficient pressure and applied thoroughly will control Celery blight, melon blight, Cucumber blight, Tomato blight, kill Potato bugs, Tomato worms, Asparagus beetle larvae, lessen the damage from the striped Cucumber beetle, and many other insects.

THE SPRAY PUMP

There are many kinds of sprayers on the market from the hand spray pump and barrel costing about $15, with the necessary equipment, to the big power sprayer costing several hundred. I have been insistent in recommending the use of a small power outfit for one principal reason: the capacity of such an equipment, if properly made, to deliver a steady pressure of between 175 and 200 pounds. It is necessary to have this high pressure to get a uniformly fine spray which will enable the user to cover the crop to be sprayed.

Ideal spraying results in the complete covering of the foliage with an even coat of solution on both surfaces of the leaves. The nearer we approach this ideal, the nearer we get to perfect results. To go through the motions of spraying without results means a loss of labor and money in materials and gives the impression that it is useless to spray. Both are wrong. Therefore, an equipment which will aid in eliminating these losses is worth while. Futhermore, while the cost of a small power sprayer will average $150 with equipment, it may easily result in a saving double or triple that amount in a single season, will enable the user more efficiently and rapidly to do the necessary spraying with less labor, and lessen the difficulty of the work.

The pump should be capable of delivering enough liquid to supply four nozzles of the "Friend" type and maintain pressure. Its capacity rating should not be less than four gallons per minute. It should be easy to pack and drain. Direct coupling with the engine is best.

The engine should have sufficient power to maintain the desired pressure working at average load. Any one knowing anything about gasoline engines is able to judge of this by seeing the machine in operation.

There may be some question whether it is better to buy rubber or canvas hose. The latter is cheaper to buy, and as long lived when properly cleaned and stored after use. It is lighter to handle. The right size is three-eighths inch.

For spraying vegetable crops the use of ¼-inch gas pipe for the spray rod is very satisfactory and a length of four feet is convenient. There should be an angle shut off between the hose and rod. A brass Y will be the most suitable connection between rod and nozzles.

The ideal nozzle will deliver a very fine spray which will coat the foliage without drenching. The following kinds of nozzles

will give satisfaction: "Friend," "Mistry," "Vermorel." The finess of the spray is partly regulated by the size of the opening in the disc of the nozzle. This opening should not be over one-sixteenth of an inch in diameter, and preferably somewhat less.

SPRAYING MATERIALS

Insect sprays—Of the poisons for chewing insects, none is safer to use and more satisfactory than arsenate of lead. The paste form is most commonly found in the market, and is used at the rate of from two to three pounds to 50 gallons of water.

Of the contact poisons, some nicotine solution is most useful for market gardeners to use against plant lice. An addition of sufficient fish oil soap to this mixture to make suds will increase its efficiency.

Bordeaux mixture is the most suitable spray for use against plant diseases. It is made by dissolving four pounds of copper sulphate crystals in 25 gallons of water, slaking six pounds of good lump lime, and stirring it into 25 gallons of water; and then combining the two by pouring them simultaneously into a third barrel. The resulting mixture will be robin's egg blue in color, and contain four pounds of copper sulphate, six pounds of lime, and 50 gallons of water. If the tank to be used holds 100 gallons, double the above quantities.

What is called a stock solution may be made by dissolving copper sulphate in one barrel in the proportion of one pound to one gallon of water; and by slaking lime in another barrel in the same proportion. As much as 20 to 30 pounds of each material can be placed in each barrel. These barrels should be kept covered to prevent evaporation and maintain the right proportion of one pound to one gallon of copper sulphate in one case and lime in the other. Made in this way, these stock solutions will keep indefinitely. When Bordeaux is to be made, three more barrels are needed. Into one is placed four gallons of the stock solution of copper sulphate, after the stock solution has been thoroughly stirred. This in turn is diluted to make 25 gallons. The lime solution is handled similarly in another barrel, six gallons being used instead of four as for the copper sulphate. The two are then combined by pouring each diluted solution into a third barrel at the same time. In this way the work of dissolving copper sulphate and slaking lime preceding each spraying, is not necessary.

There are many prepared materials on the market to take the place of home made Bordeaux, some of which seem satisfactory. In most instances arsenate of lead is combined with this to make a combination insecticide and fungicide. Under normal market conditions it is not economical to use the combined insecticide and fungicide where the fungicide alone is needed. However, at the present time, with copper sulphate costing three times its normal price, the use of such a material is advised where there is no danger from the use of the arsenate of lead. Every caution should be exercised in the use of any poison spray on vegetables which are used on the table without trimming, or where the edible portion is exposed in the field.

TIME TO SPRAY

Spraying is to prevent loss by insects and disease just as cultivation is to save soil moisture and prevent the growth of weeds. There must be prevention. The time of attack by insect pests is fairly well known. Careful observation will take note of the first intruders. Where poison sprays are to be used the plants should be sprayed shortly before the pest is due. Squash and Potato bugs often precede the crop and stand ready for the crop to come through the ground. Early spraying is essential. Where a contact spray is necessary, as for plant lice, the lice must be present before the spray will work. The application should be early before considerable damage is done.

For the fungous diseases thorough spraying before the attack is most important. A knowledge of the occurrence of the disease in the community is a very forceful warning of the need for immediate action.

METHOD OF APPLICATION

Water is simply the carrier of the poison and the copper compound, and has no other part to play. After the application is made, the water evaporates and leaves these compounds to do their work. If portions of a plant are left uncovered, there is chance for insects to feed and disease to start. The necessity for high pressure and a good nozzle has been emphasized. The combination results in a fine mist-like spray which spreads evenly, will cover foliage without drenching or waste of material, will make rapid spraying possible and pre-

(Continued on page 127)

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Owing to unavoidable conditions the regular cranberry notes for May were received too late for publication. The page this month is composed of "pick-ups."—F. Cranefield, Editor, Wisconsin Horticulture.

Flooding Best Way to Fight Cranberry Pest, Says Department.

An abundant water supply, permitting flooding and reflooding at proper times, is the best remedy for insect injury in cranberry bogs, and when the sites of new bogs are to be chosen this should always be borne in mind. On cranberry land where the water supply is insufficient, spraying, sanding, and other measures will have to be used.

These are statements in Farmers' Bulletin 860, "Cranberry-Insect Problems and Suggestions for Solving Them," by H. B. Scanmell, issued by the United States Department of Agriculture.

Cranberry bogs, usually are flooded from December or January until April or May and are reflowed one or more times in the spring to eradicate insects. Occasionally a bog is flooded in the fall, immediately after picking, for a period of one or two weeks, a practice which aids materially in controlling the pests.

HELPS INSECT CONTROL

Insect problems may be disposed of with little difficulty where the bogs are constructed properly and ample provision is made for flooding and reflooding. Many bogs, however, have been laid without supplying adequate flooding facilities and hence the control of insects has become a serious problem for some growers. New insecticides are coming to the front and these may be of value in helping to control cranberry insects, but the bulletin says that too much stress can not be laid upon careful provision for a water supply when plans are being made for the development of cranberry land.

The cranberry has many insect enemies, but some of them are of importance only on dry bogs. The foliage is attacked by three species of "fireworms," the tipworm, spanworms, army worm and fall army worm and the cranberry flea-beetle; the fruit is eaten by the fruitworm, blossom worm, cranberry katydid, grasshoppers, and crickets; the vine is attacked by the girdler toadbug, vinehopper, spittle insect, a mealybug, and the Putnam and oyster-shell scales; and the roots are destroyed by the rootworm and white grubs.

The Department of Agriculture bulletin gives brief descriptions of these pests their life histories and the means found most effective in each case in preventing their ravages and for destroying them.

How to Sweeten Cranberries

Cranberries may be served without emptying your sugar bowl.

Because of the acid content of cranberries, sweeteners such as sorghum, cane or corn sirup may be used even more successfully than with other fruits. Cranberries may be combined with other fruits which are sweet, such as apples, figs, and raisins, either to extend or modify the cranberry flavor or to add sweetness to it.

Cranberries are a valuable food because of the iron and acid they contain. Many like the acid flavor while others acquire a taste for it. The recipes suggested use sugar savers.

Cranberry Sauce

Cranberries, 1 quart
Raisins or figs or cocoanut, 1 cup
Water, 3 cups
Sorghum or cane sirup, ½ cup

Inspect and wash cranberries. Prepare raisins, cut in small pieces and add to cranberries and other ingredients, and cook until tender.

Cranberry Jelly

Cranberries, 2 quarts
Water, 1 quart
Light sirup, 1 to 1½ cups

Cook cranberries in the water 20 minutes. Put through a sieve. This amount should make about 1 quart of juice and pulp. Add sweetening and cook about 10 minutes, or until it will give a jelly. Turn into molds.

Cranberry-Apple Jelly

Apple juice, 1 pint
Cranberry juice, 1 pint
Sugar, ¾ cup
Sorghum or sirup, 1¾ cups

Prepare apple juice as for apple jelly. Add prepared cranberry juice and boil 5 minutes. Add sweetening; boil until it gives the jelly test. Turn into glasses. A large proportion of cranberry may be used if desired.

Quarantine Proclaimed Against Common Barberry.

The Secretary of Agriculture has proclaimed a quarantine, effective May 1, prohibiting the shipment of certain species of barberry and Mahonia into the States of Nebraska, Iowa, Illinois, Indiana, Ohio, North Dakota, South Dakota, Minnesota, Montana, Wisconsin, Michigan, Wyoming and Colorado from the rest of the United States. Investigations of the Department of Agriculture established the fact, some time ago, that the common barberry and related Mahonia plants harbor the black stem rust which causes very severe injury to wheat, oats, barley, rye and many cultivated and wild grasses. A hearing was held some weeks ago at the Department of Agriculture and the quarantine now proclaimed is the result.

The official quarantine, however, does little more than to recognize and make effective the practical and voluntary quarantine entered into by the great majority of nurserymen and other persons interested. An extensive campaign for the eradication of the common barberry and other rust-harboring species has been under way in the northern wheat area for the past year. The dangerous plants have been very largely eradicated from the States named in the quarantine. More than 2,000 nurserymen have signed pledges that their firms will not ship barberry plants into the areas where the effort at extermination is being made.

In the rest of the United States, the black stem rust disease is less important and there is less or no need for the destruction of susceptible plants. It was found necessary, therefore, to prohibit the States in which these plants are not being destroyed from shipping them to the protected states.

No restriction is placed on the movement of Japanese barberry and Japanese Mahonia, the most valuable and most commonly planted of the barberries and Mahonias.

Lawn Making.

The best time for lawn making is early spring but May is not too late. Several columns would be required for an adequate discussion of this subject but only a few brief hints can be given. Deep tillage is important, don't scratch the surface, sow grass seed and expect an enduring turf. The surface to be seeded should be spaded to the depth of at least ten inches and a greater depth is desirable, without of course, turning the subsoil on the surface. Grading is important as when the lawn is finished the grade cannot be changed. June grass, known also as Kentucky blue grass is best for Wisconsin conditions with a little white clover for variety. Use plenty of seed, at the rate of 60 to 75 pounds, or more to the acre and rake it in. Oats, or better, perennial rye grass may be used with the June grass to furnish a "nurse crop." Prof. Aust says: "I prefer the annual or perennial rye grass for this purpose as this makes a better lawn than oats and the perennial rye will hold over for two or three years, thus giving the blue-grass a good opportunity to become established."

Watering a newly made lawn will do more harm than good unless thoroughly done. If the soil was properly prepared watering will scarcely be necessary.

Garden Contests.

Prof. James G. Moore, Department of Horticulture, College of Agriculture, is remarkably well informed on all matters concerning this and similar subjects as well as other matters horticultural.

Bulletin No. 32, Garden Contests and Garden Exhibits by Prof. Moore, discusses the two chief ways of judging gardens, types of gardens, score cards and other points of interest. Every garden chairman should have a copy of this bulletin. Apply to Prof. Moore or this office.

Hardy Trees, Shrubs and Flowers.

Prof. F. A. Aust of the College of Agriculture is the author of a 12-page illustrated circular which is an excellent though brief treatise on planting home grounds and the classification of planting material as to size, color, hardiness, etc. Distributed by the College of Agriculture.

The commercial tobacco preparations will keep in check the green and black aphis found on chrysanthemums at this time of the year. Tobacco tea is easily made by soaking tobacco stems in water until the liquid is the color of strong tea. Spray this over the plants as often as insects are found on them. It is, of course, desirable to spray the plants with clean water 15 or 20 hours after using the tobacco water.

If you want bird neighbors, put up bird houses and bird baths and plant a few shrubs which carry fruits that birds like, such as the Juneberry, red elder, and wild cherry.

AMONG WISCONSIN BEEKEEPERS

The Wisconsin BeeKeepers Page
Prof. H. F. Wilson Editor

Spring Management of Bees.

EARLY INSPECTION.

Spring management is one of the greatest problems in beekeeping. The task is to so manage the colonies that the largest possible forces of worker bees are available at the beginning of the period when, in your locality, the most important honey plants begin to yield nectar. Efficient spring management remedies any mistakes made since the previous honey flow, and prepares to get each colony of bees to maximum strength for the yield of nectar. There are really only two seasons for the beekeeper. One is during the preparation for the honey flow—from the end of honey production one year to the beginning of the honey flow the next year—and second, during the period of the honey flow itself.

After bees are set out of the cellar, or when wintered out doors, each hive should be examined at the earliest time the weather permits. Colonies should be examined at once for three necessities: 1. Adequate stores, 2. A laying queen, 3. Sufficient room for the queen to lay eggs.

UNITING QUEENLESS COLONIES.

Where no queen is found in a hive in the spring, the queenless colony should be united at once with a colony having a queen. This should also be done where the queen appears to be failing. It does not pay to pamper a weak colony, at any time. Only strong colonies produce enough honey to pay the cost of their upkeep.

To unite two colonies of bees, place the hive containing the weak, queenless colony above the hive containing a colony with a queen, with a single sheet of newspaper between. Punch one or two holes through the paper with a lead pencil. The bees will do the rest.

If there is brood in the queenless colony, shake the bees off the brood frames into their own hive, and put the brood in the hive which has a queen, before uniting. Otherwise, the brood may be chilled and die if the weather is cool. The second hive should not be left above any longer than necessary to unite the bees, probably forty-eight hours, if the weather is cold. Too much room to heat in cool weather taxes the strength of the bees. Try to have all colonies strong and of nearly equal strength in bees in early spring.

HOW TO FEED BEES.

Where the bees are short of stores in spring, feeding may be resorted to. If you have clean combs containing good honey, replace empty ones in the hive with combs containing honey. (Beekeepers must always remember that American foul brood, a bee disease, is transmitted through honey. Do not buy hives, honey for feed or any other than new bee supplies from anyone unless the seller can show a state apiary inspector's certificate of "no disease." Dr. S. B. Fracker, Acting State Entomologist, State Capitol, Madison, Wisconsin, is in charge of apiary inspection work in Wisconsin. For the names of inspectors in other states, write the United States Bee Culture Laboratory, Chevy Chase, D. C.)

Sugar syrup may be given in a feeder placed as near a cluster of bees as possible. For this a France feeder is ideal when placed inside an empty super above the bees. If the weather is cold, lay several thicknesses of newspaper between the empty super and the brood chamber. Tear a small round hole in the newspaper over which to set the feeder. This keeps the heat below. Sugar syrup is made of one part clean water and two parts pure, granulated cane sugar. Impure feed causes dysentery among bees. Do not feed heated syrup. The amount of feed needed to rear a frame of brood is unknown. Bees may have to be fed frequently if short of stores until nectar is available from natural sources.

PROVIDING ADEQUATE ROOM.

If a strong colony is opened early in the spring, and all frames are found to be full of brood and honey, more room will be needed at once, to prevent swarming. Add another hive body of clean drawn combs containing but little honey. This will allow the queen adequate room for egg laying, and give the bees space to store the first honey gathered in the field.

These manipulations bring one up to the beginning of the first important honey flow in late spring. Put on supers at the beginning of the honey flow, as needed. If you are producing comb honey, a queen excluder may be placed above all the brood, even if the queen is laying in more than one brood chamber. With extracted honey produce-

ers, the queen excluder may not be necessary, but is frequently used.

SWARMS ARE UNDESIRABLE.

With adequate room provided for the queen and ample space for the storage of surplus honey available at all times, swarming should be reduced to a minimum. To allow the bees to swarm is to divide the strength of the colony. The greater the number of bees in each hive, kept undivided, the greater the amount of honey that may be expected from each colony, if the season is not a failure. It is the number of strong colonies of bees at the beginning of the honey flow and not the total number of colonies you own which determines your prospects for a good crop of honey.

Everbearing Strawberries

M. S. Kellogg in Wisconsin Agriculturist

Our experience in growing everbearing strawberries has been a success and a failure both. We have been on both sides of the fence and some of the time we have been on the fence, but I think that this fruit that has come to us now has a permanently fixed place in our horticultural life.

That has been demonstrated by something over fifteen years experiment, so they are beyond the experimental stage now. The pedigree, as you might term it, or the blood lines of that particular class of fruit have been fixed firm enough and strong enough so that they reproduce themselves with very little variation.

Our success has been in connection with other of our fruit growing operations. Some years ago when weather conditions were favorable, these strawberries have been marketed at a price that would be almost unbelievable if we did not have a fancy hotel or restaurant trade.

We got as high as 45 cents a quart for some of our everbearing strawberries, and if weather conditions are anywhere near favorable, at 20 cents a quart or 10 cents a pint, as a retail proposition, they are a money making crop.

They will yield if they have been properly cared for and given proper cultivation. They will yield approximately as much during the fall months as the June bearing varieties will yield during the regular strawberry season. Some varieties will do much better on certain soils than others.

Progressive is the better plant maker. The berries are not quite as large as the Superb and are comparatively of better quality for a fancy trade, requiring berries of extra quality. The Superb will produce better berries, larger size and will bring comparatively more money on the market than the Progressive.

We have practiced, where we have been attempting to grow the berries as a fall crop to disbud the plants until about the 1st or 15th of July, according to the season, and when you want your berries to begin to mature, if you allow everbearers to go their own gait, they will give you a crop of berries in June, at the same time the other berries will ripen, practically, in our case they will ripen around five days earlier than the standard varieties.

Following this they would take two to five weeks rest, then the new blossoms appear, and it will take three to four weeks from the appearance of the first fruit buds until the berries begin to ripen. If you disbud them early in the season, you will get your berries when you want them to come and continue till freezing time.

I remember one experiment ten to twelve years ago when we were testing out fifteen to eighteen varieties of these everbearing, and we have tried everything. We are looking for something a little better than we have. We have tried an experiment letting these berries bear into the summer on an experimental block.

The rows were probably 12 rods long and there were fourteen to fifteen rows in that block, part of them Dunlaps and other June bearing varieties, part of them the everbearers and actual records of the berries produced by the different varieties, comparing the productivenes of the everbearers with the Dunlap and other standard varieties, they produced in June from 45 to 80 per cent as much fruit as the standard sort.

Is farm life worth while? Not if it is one continual round of drudgery, 365 days in the year, without conveniences or any playtime. Nor, for that matter, is life carried on that way anywhere of much value. Conveniences, a garden, flowers, playtime, and some time given to neighbors.

Go right after the common barberry in your neighborhood. Take it out now and plant some other shrub. Japanese or Thunberg barberry is safe to leave. In fact it is a much finer plant and does no harm.

Wisconsin Horticulture

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FREDERIC CRANEFIELD, Editor.
Secretary W. S. H. S., Madison, Wis.

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To the Members of the State Horticultural Society:

On behalf of the National Horticultural Society of France and the fruit growers of France whose homes, trees and vines were destroyed by a ruthless and savage enemy: On behalf of our two million soldier sons now in France who well know what the French have suffered: in memory of our brave boys who gave all they had that we might be spared such horrors I ask your consideration of the following appeal. I ask only for *one* tree. Will you plant it?

FREDERIC CRANEFIELD.

PLANT A TREE IN FRANCE

The appeal of the National Horticultural Society of France, printed in the April number of this paper has brought many generous responses. Every letter has been acknowledged and further recognition will be given later. The subscription will close June 1st and all who wish to contribute should act soon. The campaign to date has been wonderful in some respects and disappointing in others. Some of the letters sent with the subscriptions and marked personal have given me more satisfaction and happiness than would a million dollar personal gift. My pride in being an American has been intensified—if that were possible.

The disappointing feature is the lack of *small* contributions and that quite likely is due to the framing of the first appeal. To those who have contributed the larger sums the writer tried to express his pleasure but if five hundred members more will each plant just *one* tree in France, if no more, the list on June 1st would be one of the grandest pages in the history of our society. If one thousand of our sixteen hundred should each send 75 cents there could be no finer record. Big or little, all will be appreciated. It may be that our gifts will not serve to plant the trees *this* season but do not doubt that every cent will be eventually applied to that purpose. We have all bought bonds and thrift stamps, contributed to every drive until we are just plain tired and quite broke but it seems to me this is an appeal that we can't pass by. The fruit growers and lovers of fruits and flowers of France are calling to us across the seas. Will we respond? Just one tree if no more. No doubt you mean to do this but have neglected it. There will be not more than twenty days after you read this in which to contribute. A part of the appeal which appeared in the April number is reprinted here.

AN APPEAL

The horticulturists of France, through their national Society, have appealed to the horticulturists of Wisconsin for help. Shall we fail them? As citizens of Wisconsin and the Nation we have responded liberally to every appeal for help from stricken Belgium and France but here is a chance to help the growers of fruits and flowers who are in deep adversity.

Within a few weeks our fruit trees will be loaded with bloom and then with ripened fruit. There will be no apple blossoms in Northern France this year, only withered branches and the stumps of trees. Soon the lilac and the syringa will brighten our lawns with their clusters of fragrant flowers but no flowers will bloom about the heaps of ruins that were once the homes of happy people who loved fruits and flowers even as we do. Will you help them?

Whatever we give will be expended as we indicate so let us "Plant a Tree in France." Seventy-five cents will plant a tree. *How many* will you plant? Send your contributions to Secretary Cranefield, Madison, Wis., who will forward them to the National Horticultural society of France.

THE HIDEOUS RETREAT

The Huns were retreating sullenly from the Aisne. French refugees were flocking wistfully back to what were once their homes. French soldiers, on leave from the front, were trudging forward on fearful pilgrimages through charred roads and pulverized villages to see what was left of their farms.

The Boche has done hideous things. Only those who have anxiously watched their own things grow can fully understand. The Hun had cut down everything he could see, even the lilac bushes —only what was in the ground, alive, they could not kill—according to a vivid report in Collier's Weekly.

One soldier was amazed to find his grape-vines standing. They were budding. He reached tenderly for one of the rough brown stems. It stirred oddly. The sweat broke out on his forehead. For twelve years he had patiently cultivated these vines. He took hold of the lower stem. It had been severed from the root with a fine vineyard saw, and its sap was oozing from the stump. For three years he had fought the Hun in the trenches. But he had never known that there were people in the world who could do this cold, calculated harm to a grape-vine.—*From Fourth Liberty Loan Poster, 1918.*

Control of the Oyster Shell Scale.

By Charles L. Fluke, Assistant Entomologist, College of Agriculture.

The Oyster Shell Scale is the most common scale insect occurring on apple trees in Wisconsin and is the subject of frequent inquiry by farmers. It is readily distinguished from other scales attacking apples by its rather peculiar shape, resembling a small oyster shell, and by its color, which is very much like the dark brown of the bark of apple trees; the latter fact making it particularly difficult to detect if only a few scales are present.

The Oyster Shell Scale seldom kills a tree; however, in severe infestations complete limbs and twigs are often killed which stunts and retards the growth and development of the plant infested to such an extent that the resultant tree is a hindrance rather than an asset to the orchard.

The scales attack a wide range of plants including apple, maple, poplar, willow, plum, cherry, grape and many other economic plants.

The winter is passed as tiny whitish glistening eggs under the female scales formed during the preceding summer. These eggs begin hatching the latter part of May or early June and the young scales soon seek suitable places in bark, leaves or fruit to insert their fine thread-like beaks. By fall the female scales are mature and egg-laying takes place, the adult dying soon after.

HOW TO CONTROL THE OYSTER SHELL SCALE.

Lime Sulfur is the standard spray for this and other scales on apple trees. It should be used at the rate of one gallon of lime sulfur to twelve gallons of water, and should be applied in the spring as the buds are swelling and before any foliage appears. The spray must actually come in contact with the scales to control them, therefore a thorough application is necessary.

If the dormant spray is not applied summer sprays for the codling moth to which has been added lime sulfur, one gallon to forty gallons of water will help in a large measure to keep the oyster shell scale in check. Orchards in which the summer sprays are regularly applied seldom need a special winter spray for this particular scale, however, the most efficient control is the dormant application and should not be regularly neglected.

Harden-off plants before setting them out by giving them more air and less water than they have been used to.

Cultivate around all shrubs and herbaceous plants now. Get the grass away from the roots so that moisture can get in about the plants.

I want to plant a fruit tree in Devastated France and enclose _____, which please forward to the National Horticultural Society of France.

_____.

To Frederic Cranefield, Secretary W. S. H. S.

Madison, Wis.

Roses in Minnesota.

To have a really fine rose garden one must have at least a thorough working knowledge of the habits and requirements of roses. Soil, location and varieties, how to plant, prune, etc., are all important.

Do not select a spot near trees or shrubs; have your bed or garden at least as far away as the height of the trees, as the roots spread as far as the branches, taking all the fertility from the ground.

Sun is necessary, but it need not shine on the beds all day. If you have any choice, place your beds where the morning sun is slow to come, as the roses will then hold the dew and their freshness much longer.

By the way, always pick roses as early in the morning as you can, while the dew is on them.

The ideal soil is clay loam, a sticky kind of dirt that will let the water through. This soil will grow good roses but not the best.

Do you want better roses? Add old cow manure and leaf mold, and mix well at least two weeks before planting, leaving the surface of the bed two inches lower than the gound to hold the rain. If you would have the very best roses, you must work, and this is what you must do: If your soil is not naturally well drained, dig out your bed or trench to a depth of two and a half or three feet. Fill in the first six inches with coarse stone or broken brick and finer stones on top. The next six inches must be well rotted cow manure, on top of the stones, and then the top soil. When the land is well drained, begin with digging a trench two or three feet deep, and then fill in with six inches of manure, and then top soil.

When the soil is loamy add yellow clay (it gives the roses a deeper color), to make the ground more solid and hold the moisture; also add to this kind of soil old cow manure, leaf mold and a little bone meal; the latter will be in good condition for the roots to absorb in from thirty to sixty days, just when they are in full bloom. Mix all together and pulverize.

Have you only a sandy place? Dig it out and fill the hole with a combination of clay, loam, leaf mold and old cow manure in equal parts. Thoroughly mix and make fine with the rake. Do this, too, when your beds are old.

The soil around roses should be changed every five or six years. The bushes may be taken up early in the spring and the dirt changed. They really should be dug in the fall and buried, all but the tips. The bed should then be made new and allowed to freeze all winter, in this way killing many of the bugs.

Care should be taken in selecting stock to have the graft not more than three inches from the roots, as this gives less chance for suckers. Suckers have seven leaves on each stem, and the wood is reddish and thorny.

When planting, spread out the roots as much as possible, put the fine dirt over them and press in firmly with the foot. The graft should be about three inches below the surface of the ground.

Hybrid perpetuals should be planted two or three feet apart, according to the space you have. Hybrid teas one a half or two feet apart. When your bed is all planted, add one-half cup of air-slaked lime to each plant and rake in well. Then prune, leaving the bushes not over two feet high, with about one inch of stem above the last bud. When all is finished, cover the whole surface with about six inches of old cow manure and water well if the ground is not already wet.

Soot, wood ashes, nitrate of soda and a very little muriate of potash, are all good fertilizers for roses, but it would take lots of space to tell about them. If you do try to use them, do so with discretion.

The most important thing of all is a thorough preparation of the soil. If you do this well in the beginning two-thirds of the work is over.

For a small garden, the best twelve varieties for me have been:

Hybrid Perpetuals—Mrs. John Laing, soft pink; Frau Karl Druschki, large white; General Jack, red; Mad. Gabriel Luizet, silver pink; Marshall P. Wilder, cherry red; Clio, white, sometimes tinted pink; Prince Camile De Rohan, dark velvet red.

Hybrid Teas—Killarney, a fine clear pink; Mad. Caroline Testout, salmon pink; Kaizerine Augusta Victoria, creamy white; Gross an Teplitz, velvety crimson; climbing: Dorothy Perkins, clusters of light pink.

Madame Plantier is a hardy white June rose, very prolific and should be in every garden. There are so many beauties, it is hard to choose.

The Hybrid Perpetuals are the most hardy, but do not bloom every month. The Hybrid Teas do, but need more care as to covering for the winter.

The Cochet roses are all teas, but are worth having even if one has to replace them every year.

I hate to talk about bugs and things, yet must just a little. The first thing in the spring, before the leaves come out at all, spray the bushes with arsenate of lead one and a half ounces to five gallons of water, and then again when there

are a few leaves. If this does not kill all the bugs, try it again when the buds are coming. The arsenate of lead will stick to the leaves all summer and does not discolor them, so you have a permanent poison—but as the leaves grow out, of course, you will have to add more.

Powdered sulphur, dusted on the damp leaves, is good for mildew. Some tobacco solution or soap suds is good to kill aphis.

White hellebore dusted on damp leaves kills many enemies of the rose, but the rain washes it off.

The green worms and rose bugs will have to be hand-picked into a pan of kerosene. Very early in the morning you will see most of them at work.

But you will not have all of these troubles. This is just to show you what to do, if you have one or two of them.

Covering for the winter:—I have had the best success, burying roses in the ground, leaving the tips out. Many people bend them over and cover with leaves or straw, and over this place tar paper or boards. They must be kept dry and have a little ventilation. It is not the cold that kills them but the thawing and freezing. All of the Rugosa roses are hardy and should be in every garden. There are a number of improved varieties that are double.—Mrs. H. B. Tillotson in Minnesota Horticulturist.

Black Hills and white spruce make good evergreen windbreaks for the farm. They can be planted up to June 1.

WANTED

Position as Assistant Gardener.

CHRISTIAN CONRAD
Onalaska, Wis.

TOP DRESSING TALKS

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AGRICULTURAL DEPARTMENT

Plant a few gladiolus bulbs now and more in a week or ten days.

Plant a few Progressive everbearing strawberry plants this spring. They will fruit this fall if the blossoms are kept off till about July 1.

Do not grow seedlings in a close, moist atmosphere and expect them to do well when set outside. They need air. Cool, airy conditions will cause the plants to grow stocky and they will be in better condition to set out.

Among the hardy perennials that should be in every garden to furnish cut flowers are iris, larkspur, peony, columbine, boltonia, and autumn daisies. All are of easy culture and may be set out now.

Early cabbage should be set to their first leaves in soil.

Cabbage Injured by Striped Flea Beetles.

L. G. Gentner.

In some parts of the state these tiny striped flea beetles cause very serious injury to cabbage seedlings in the seed bed. Sometimes from 25% to 65% of the seedlings are either killed or made unfit for transplanting, and it becomes necessary to ship in plants.

Control Measures.—Flea beetles are not readily controlled by poisons but may be kept off the plants by thoroughly spraying these with Bordeaux mixture which is made up as follows:

4 ounces bluestone, 4 ounces quicklime, 12 quarts water. Dissolve the bluestone in a wooden or earthenware vessel, using hot water, and then add water to make 6 quarts. Slake the lime by adding water a little at a time. When slaked make up to 6 quarts. Pour the two solutions together through a strainer while stirring and the spray is then ready to apply. Sometimes a combination of Bordeaux mixture and lead arsenate is used.

At times the flea beetles attack the seedlings as soon as they begin to push through the soil. In such cases sprays seem to be of little value and the only thing that can be recommended where this occurs year after year is to grow the seedlings under a cheesecloth screen to keep out the insects and remove this as soon as the beetles begin to disappear so as to harden up the plants.

Destroy Plant Lice.

Plant lice are small soft-bodied insects that occur in masses on the tender shoots of plants and on the under sides of leaves often curling these badly. They have tiny beaks which they insert into the plant tissues and with which they suck the vital juices, often dwarfing and stunting the plants or killing them entirely.

Plant lice may appear on the plants early in the season and continue to multiply rapidly through the summer.

Poisons will not kill plant lice. One must use a contact spray which actually touches them. The standard treatment is a 40% nicotine sulfate at the rate of 3/8 pint to 50 gallons of water to which two pounds of soap, dissolved first in a gallon of water, have been added. For small amounts use one teaspoonful nicotine sulfate and an inch cube of soap to each gallon of water.

Important.—It is best to spray before the leaves curl badly. The spray must actually touch the insects in order to be effective, and should therefore be forced well into the curls and up under the leaves. A nozzle placed at an angle to the rod is the best. Any plant lice skipped by the spray continue to multiply. It may be necessary to make a second application. One may also steep one pound of tobacco leaves or stems in four gallons of water for an hour and apply this, or one may use fish oil or laundry soap at the rate of one pound to 8 gallons of water.

L. G. Gentner.

Control the Currant Worms.

What the Insect Looks Like.—Wherever currants and gooseberries are grown they are troubled with one of our most common garden pests, the imported currant worm. The adult of this insect is a saw-fly, not a true fly but a form having four wings. The female is

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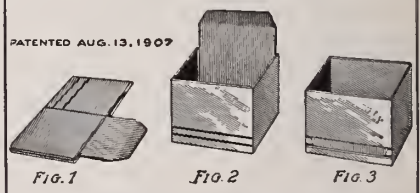

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black with a conspicuous yellow abdomen while the male is much smaller with a darker body.

With the first real warm days of spring the adults emerge from their winter cocoons and as soon as the first leaves expand, whitish eggs are laid end for end in rows along the main veins on the underside of the leaves, principally those nearest the base of the plants. The eggs soon hatch and the destructive work of the worms begins. The larvae are conspicuously marked with black spots and are well enough known by gardeners to need no description. The life cycle is repeated in the summer making two broods a year.

How to Control the Currant Worm.—The larvae are very easily destroyed by applying a spray of arsenate of lead 1 to 1½ pounds in 50 gallons of water (5 or 6 level teaspoonsful to a gallon). If the bushes need to be sprayed when the fruit is nearly mature, fresh hellebore should be used at the rate of 4 ounces to 2 or 3 gallons of water. The application should be made as soon as the young worms make their appearance.

Charles L. Fluke.

Control Measures for the Cabbage Worm.

The cabbage worm comes from yellowish to orange yellow colored eggs laid by the common white cabbage butterfly. It annually causes serious injury to cabbage and cauliflower. This pest may readily be controlled by the use of arsenicals. The best results are obtained by observing the following points.

1. Spray the plants when the worms first hatch. Don't wait until the plants are badly injured.

2. Repeat the spray, if necessary, to cover new leaf growth and to kill the worms hatching from eggs laid later in the season. The eggs for the second generation are usually laid about the early part of July and for the third generation about the early part of August.

3. Use a "sticker" such as laundry soap in liquid sprays to make them stick and spread better on the smooth, waxy cabbage leaves.

4. Apply the spray in the form of a fine mist so that the foliage is thoroughly coated.

5. Keep spray material well agitated so that it will not settle to the bottom of the tank.

6. Pour spray material into tank through a strainer to prevent clogging the nozzle. A curd-like precipitate often forms when soap is dissolved in hard water.

ARSENICAL SPRAYS.

Calcium arsenate, lead arsenate and paris green all give satisfactory control. They should be used at the rate of one pound of the powder to fifty gallons of water in which one or more pounds of common yellow laundry soap has been dissolved. When using hard water, more soap is required as the hard water causes the soap to curdle. Soft water should be used where available.

The sprays may also be dusted on the plants early in the morning when these are wet with dew. When so used, they may be diluted with from 5 to 10 parts by weight of lime.

A hand sprayer costing from 75c.

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The Hawks Nursery Company
are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.
Wauwatosa, Wis.

to $1.50 is sufficient for the small garden, while for an acre or more one should use some type of knapsack or compressed air sprayer, costing from six to ten dollars. For still larger acreages, it is best to use a four-row traction sprayer such as is used for potatoes.

For dusting small plots one may use a cheesecloth sack or a tin can with holes punched in the bottom. On larger plots, one should get some type of dust gun.

L. G. Gentner.

Plan to Fight the Cutworm.

L. G. Gentner.

Cutworms are ugly dark-colored worms which cause serious losses annually to such crops as corn, potatoes, melons, cucumbers, cabbage, peas, etc. Prevent these losses.

Injury.—Cutworms feed at night, cutting off young plants close to the ground and feeding on the foliage and tender parts of older plants. During the day time one cannot usually see them on the plants for they will be hiding in the soil near the bases of the plants. Grass lands and lands grown up to weeds last year are likely to contain many cutworms.

What to do.—The ground should be thoroughly worked in the spring and kept free from weeds. Then just before the crops come up or before the plants are set out one should broadcast poison bran mash over the ground at the rate of four or five pounds per acre. This had best be done in late afternoon or early evening so that it will not dry out before the cutworms feed on it. The poison bran mash may also be used in the fields after the crops are up, as the cutworms will feed on it in preference to the plants and will be poisoned.

A small number of plants may be protected by placing tin cans, with tops and bottoms cut out, over the plants, pressing them well into the soil. Stiff paper collars may also be used.

Poison bran mash. Thoroughly mix one pound of paris green or white arsenic, or two pounds of lead arsenate with 25 pounds of bran. Dilute two quarts of low grade molasses with two or three gallons of water and add the juice and rind of six finely chopped lemons or one ounce lemon extract. Stir this into the bran adding more water if necessary to form a crumbly mash.

Pioneer Horticulturists of Omro Die on the Same Day.

Mr. and Mrs. Joseph D. Treleven, pioneer residents of Omro, died on Monday, Feb. 24, at the family residence. Mrs. Treleven had been ailing for many months and was finally relieved from her sufferings at 1:30 A. M. Mr. Treleven who was stricken with paralysis on Friday morning, Feb. 21, followed his wife in but a few hours, his demise occurring at 11:30 A. M. of the same morning. Joseph D. Treleven was born January 3, 1838, in Cornwall, England. Elizabeth A. Tanner was born at Oakfield, Wis., July 31, 1845. They were married July 5, 1865, and located on a farm near Omro, where they have resided up to the time of their death. Both being people of unusual business ability, they held many positions of honor and trust throughout the county, and were highly esteemed by the community.

They were life members of the State Horticultural Society. In their passing they are almost the last of the generation of sturdy

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pioneers who helped develop this section of the country.

The double funeral was held Sunday, March 2, at 2 o'clock at the residence, Rev. Mr. Codd officiating. Interment in the Omro cemetery.

SPRAYING FOR THE MARKET GARDENER

By H. F. Thompson

(Continued from page 115)

vent the washing and dripping that occurs when a coarse spray is used or too long application practiced.

The apparatus and its use should be directed to cover foliage as evenly and completely as possible. There is a tendency on the part of inexperienced men to spray foliage until it drips in order to cover it thoroughly. There should be as little of this spray material lost from the foliage as is possible and still have the spraying thoroughly done.

It is not good practice to hold the spray nozzle closer than within 12 inches of the crop to be sprayed, except where it is necessary to spray under the foliage. Then it may be advisable to so arrange rods and nozzles that a spray is thrown up from close to the ground.

Grasselli TRADE MARK REG U.S PAT OFFICE SPRAY PRODUCTS

INCREASE
Your Production and Profits
USE GRASSELLI

Lime Sulphur Solution
Arsenate of Lead Paste
Arsenate of Lead Powder
Calcium Arsenate Powder
Bordeaux Mixture
Sulphate of Nicotine 40%

It Pays to Demand the GRASSELLI BRAND

Prompt shipments made from our Milwaukee Branch
Spray booklet and further information upon request

THE GRASSELLI CHEMICAL CO.
Milwaukee, Wis. Established 1839 Cleveland, Ohio

ARRANGEMENT OF PLANTING

Where spraying is to be practiced, it is wise to make provision for the work when planting by arranging rows so that the spraying apparatus may be carried through the fields without injury to crops or a loss of labor in carrying hose. On our market gardens where areas are comparatively small and the land is worked intensively, it is not desirable to drive through planted fields more than is necessary. It will probably be better to use a long hose and locate the spraying outfit advantageously. For melons and Cucumbers a wide row should be left every 50 feet. The vines can be laid along the row in this case, and the spray rig driven through the field, one man spraying on either side to the distance of 25 feet. For Celery the rows can be so spaced that the wheels of the spray rig can straddle two rows with the horse walking between and such a spacing made every 50 feet.

Cream City Dry Arsenate of Lead

Contains approximately 33% arsenic oxide, therefore has maximum killing power. Due to its fineness, is easily and uniformly sprayed, sticks longer to the plants and therefore gives the highest efficiency and economy.

Cream City Nitrate of Soda is a fertilizer which gives the plants an early start and supplies the necessary nitrogen.

Cream City Lime Sulphur 33° Beaume.

Manufactured by

CREAM CITY CHEMICAL WORKS

772-778 Kinnickinnic Ave. **Milwaukee, Wis.**

Chinese Cabbage in Ohio

For a gardener having several years' experience in growing three or four acres of Celery, would Chinese Cabbage prove to be a good crop? We have very good Celery and Cabbage soil under overhead irrigation. We have thought that something of this sort might fit in nicely following Onion sets and permit us to crop the same piece twice. —H. B., Ohio.

There will be no serious difficulty in growing Chinese Cabbage. There are two rather distinct types of this plant being grown in this country. One called Pe-Tsai is a taller, more slender growing form with a somewhat less compact heading habit, while Wong Bok is of a shorter and much stockier heading habit. The latter type seems to be preferred.

One of the secrets of success in growing Chinese Cabbage is that of not starting it too early. The seed should not be sown until about the middle of July, and may either be sown in the field in rows 28 to 30 inches apart, or transplanted from the seed bed. The plants should stand about 15 inches apart in the row.

The Chinese Cabbage thrives best under cool, moist conditions, and will not be damaged by light frosts. Its culture has no particular similarity to that of Celery, as it ordinarily requires no special blanching methods.—*L. M. Montgomery in Market Growers Journal.*

Dahlias require moist, cool weather for their best growth; consequently they must either be started early or set out late, so as to bloom before hot weather or after the hottest part of summer.

Treating all seed potatoes for scab before planting is a cheap insurance. They, of course, must be planted on new land or land free from scab.

Early cabbage requires a warm rich soil. Late cabbage will do well on much cooler soil if it is rich.

Don't put good seed in poorly prepared ground. Much of the season's cultivation can be more easily done before any seed goes into the soil.

Subscriptions to the "Plant a Tree in France" Fund close June 1st

If You Mean to Contribute Do It Now

Just One Tree

France Never Forgets

Clip the Coupon, Page 121

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, June, 1919 | Number 10

Rubus Odoratus, or Thimble Berry, of Northern Wisconsin. The luxuriant foliage and showy blossoms of the Thimble Berry are attractive and real, but the fruit is deceptive, a thin layer of pulp barely concealing an enormous receptacle.

Standard Fertilizer Analyses for Truck and Vegetable Crops.

Most vegetable crops leave smaller humus residue in the soil than do field crops. A good crop of oats leaves a stubble which plowed under adds a large amount of organic matter to the soil. Sugar-beets, on the other hand, are frequently harvested top and bottom, one part going to the silo and the other part sent to the sugar factory. Similarly, a thick and vigorous grass sod plowed under may add as much humus to the soil as a coat of manure, while a crop of celery is entirely removed from the soil, and makes no return for the organic matter destroyed during its growth. Vegetable crops, as a class, are very "hard" on the soil, and make the problem of maintaining organic matter very important.

In years past manure has been largely used on vegetables, sometimes in extravagant and wasteful quantities. Today, however, this source of supply has been diminished, for the "gas tractor leaves no organic residue." Vegetable fertilizers must, in general, be those which furnish nitrogen in "food" quantities, and the other plant foods in such supply as will grow both the main crop and the cover crop needed to maintain humus.

At the outset we must make a distinction between vegetables grown under field conditions—cannery sweet corn, peas, tomatoes, etc.—as against vegetables grown under intensive market-gardening conditions. Heavier fertilizer applications must be used under the latter conditions, with of course, certain changes in analysis.

POTATO FERTILIZERS.

Take potatoes as an illustration. Regardless of where grown, quick growth is always desirable, and a good percentage of nitrogen needed. Potato fertilizer should also always contain potash—for the potato is preeminently a potash-loving crop. When grown as a main season crop, as from New Jersey north and west, a fertilizer which has been largely used in past years is a *5—8—7 for the sandier soils, 4—8—6 and 4—8—4 for the loamy soils. Naturally, there have been variations from the foregoing analyses, a very popular fertilizer in New Jersey just now being 4—8—3 and 4—8—5. As we go farther west the amount of nitrogen is decreased. In Michigan, with more nitrogen naturally in the soil, and seemingly less phosphoric acid, the analysis for field crop potatoes changes to 3—10—4 or 3—10—2. Occasionally, when used with manure, a 3—12—0 can be used to advantage.

WHERE QUICK GROWTH IS ESSENTIAL.

On the Eastern Shore of Virginia and in the Norfolk trucking regions potatoes are grown to reach the earliest spring market. Quick growth is essential. The difference of but a few days in reaching the market often makes the difference between a profitable price and a "glut-in-the-market" price. In these regions a 7—6—5 has for years been very profitably used. We are free to admit that experiments show 5—8—5 to be really more effective in producing early potatoes than a 7—6—5, although as it happens the total crop is seemingly increased by the use of a large quantity of nitrogen. At the same time, a 7—6—5, which has been used for years, is in itself a concentrated fertilizer, and therefore, must continue to be offered until such time as farmers generally find it to their advantage to use a fertilizer lower in ammonia. Should this fertilizer be used in Aroostock County, Maine, however, or in the Wisconsin potato region, it would probably result in too vigorous a growth of tops, and a corresponding failure of the crop to "bottom out" well.

In Maryland, Kentucky and other states south, potatoes are often grown late in the season, planted in July or even in August, and harvested very late in the fall. This requires fertilizer of a different analysis. Since the crop is planted at a time when soil nitrogen is in its most available condition, less is needed in the fertilizer. This could be accomplished by cutting in half the acre application, but in doing this we would also cut down the potash and phosphoric acid. It is better to retain the normal application, but to reduce the nitrogen in the fertilizer. Under these conditions a 2—10—6 fertilizer has given extraordinarily good results. It is, therefore, tentatively listed in the "standards" as a special analysis for a special purpose.

TRUCK-CROP VEGETABLES.

For vegetables grown under "extensive" conditions, fertilizers of the 3—10—4 series are used to excellent advantage—the various members being 3—10—6, 3—10—4, 3—10—2 and 3—12—0. These contain more nitrogen and the acre application is also higher than for staple crops, so that the amount of nitrogen is increased in two ways.

The selection of fertilizer from this group depends principally upon the soil, but partly upon the crop. All root crops respond to potash. Therefore, beets, sugar-beets, mangels, carrots and parsnips should usually have fertilizer

* 5 parts nitrogen, 8 phosphorus, 7 potash.

carrying at least 2 per cent of potash, under normal conditions probably 4 or 6 per cent. Should manure be applied to these crops, it is probably more profitable to cut down the acre application for fertilizer rather than to select a fertilizer carrying no potash.

The same group of fertilizer does nicely when cabbages are grown under field conditions, usually for kraut factories. When, however, the same crop is grown under market gardening conditions, as it is on Long Island and in many other sections of the country, a larger amount of nitrogen is desirable. This gives us our second series of vegetable fertilizers—4—10—6, 4—10—4, 4—10—2.

FERTILIZERS FOR BEANS AND PEAS.

Navy beans and Canadian field peas, when grown under field conditions, had best have a grain fertilizer containing 2 per cent of ammonia. These two legumes are not nearly as active nitrogen gatherers as are soybeans and cowpeas—hence the desirability, under normal conditions, of including nitrogen in the fertilizer used.

Since the acre value of most vegetable crops is high—much higher than is the acre value of our field crops—the cost of the fertilizer for growing vegetables is generally of relatively minor importance. Before the war it was considered good business on the part of vegetable growers to use potash, as well as the other plant food elements, in liberal quantities, on the basis of insurance—for in this, as in so many other things, it is better to be safe than to be sorry. There is no doubt that as price conditions stabilize, and as production gets on a normal basis, vegetable growers of the future, as in the past, will adopt this attitude.

Buying the Right Fertilizers

Summary of Bulletin No. 22 State Department of Agriculture, C. P. Norgord Com., State Capitol.

In any system of farming a certain amount of plant food must be purchased in order to keep the soil fertile.

There are three kinds of plant food in which soils may be deficient and which are sold in commercial fertilizers, — Phosphoric acid, containing phosphorus; ammonia, containing nitrogen; and potash, containing potassium.

The fertility of the soil cannot be profitably maintained by commercial fertilizers alone, but must be used as an addition to lime, farm manures, legume crops, and other crop residues.

A so-called complete fertilizer contains nitrogen, phosphorus and potassium, but does not return all the plant food removed. The amount of nitrogen or ammonia added in the average application of the ordinary fertilizer returns only a small fraction of that removed by the crop. The nitrogen content of the soil must be largely maintained by legume crops or by legume crops and barnyard manure. By adopting a proper rotation the nitrogen content of the soil can be maintained in general farming without the purchase of commercial fertilizers containing nitrogen.

In order to obtain nitrogen through legume crops the soil may require inoculation. Cultures for inoculation can be obtained at low cost from the College of Agriculture.

The phosphorus or phosphoric acid content of the soil can be properly maintained by the purchase of fertilizers. The principal phosphorus containing fertilizers are rock phosphate, bone meal and acid phosphate. Farm manure is low in phosphorus and a phosphate fertilizer should be used even when an abundance of manure is available.

Potash is five or six times its normal price and its extensive application at present is profitable only in exceptional cases. Many soils contain unlimited amounts of potash which can be made available by the use of organic matter such as green manure and barnyard manure.

Many crops will not grow on sour or acid soils even if abundant amounts of nitrogen, phosphoric acid and potash are present. Limes correct or neutralize acidity. The value of lime depends upon the amount of acidity overcome by unit weight. A large amount of impurity or water in lime means lower value. Limes should be bought on the basis of their neutralizing value (per cent of calcium carbonate or equivalent) and water content.

Be sure every dahlia tuber planted has at least one eye at the tip.

The boy or the girl interested in a garden, poultry, or pets, as a rule, becomes a self-respecting business man or woman. Large flats and small yards do not tend to make good citizens of the children compelled to be sheltered by them.

Sweet peas should not be hilled, as there is danger from stem rot if this done. It is well to leave the rows a little bit hollow to catch and hold the rain. Sweet peas should be planted early since they make their best growth in cool, moist weather.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Some interesting and not generally known facts relative to the cranberry industry of southwest Washington are gathered from the annual report of E. F. Perry, horticultural inspector for district No. 7 which comprises the counties of Pacific, Grays Harbor, Mason, Thurston, and Lewis. The report says:

"The cranberry industry of the North Beach District, Pacific county, and a strip of land lying south of Aberdeen, Grays Harbor county, are rapidly developing into one of the leading horticultural interests of the northwest.

"We believe this wonderful horticultural product demands some special attention from the state department at this time.

"The cranberries of Pacific county are located on the north beach peninsula, a strip of land in the extreme southwest part of the state of Washington, bounded on the east and north by Willipa Harbor, on the south by the Columbia river and on the west by the Pacific ocean.

"The topography of this peninsula is a very interesting study. The underlying strata is composed wholly of clean sand and the greater part of the peninsula is a series of low ridges. It is between these ridges that the cranberry marshes are found, high enough above sea level that they are not overflowed by salt water at high tide. The soil is composed of decayed vegetable matter, the accumulation of ages of the rank growth of ferns, grasses, mosses and flags. The cranberry is a native of this district. When the first white men visited the peninsula, the Indians were gathering the berries. The district inspector has been informed that it was 1909 or 1910 that the first bogs were planted with cuttings sent from the east. The development of the industry has been quite rapid, and the yields from the bogs now in bearing are very satisfactory. The experimental stage is now passed. The industry has now reached the commercial stage. The crop for the district in 1917 was about 3,500 barrels and in 1918 about 15,000 barrels. One grower from a little less than one acre harvested about 206 barrels. There is a series of bogs of great acreage located on the peninsula near Willipa Harbor, in Grays Harbor county, south of Aberdeen. These bogs have just begun to be developed. This locality has about the same topography as in Pacific county and the soil and climatic conditions are of the same character.

"This last season the crops in Grays Harbor county were very satisfactory, several hundred barrels being harvested from a small acreage. Some 250 acres will be ready for development this next season. The cranberry bogs of western Washington will of course require control measures to protect them from destructive insect pests and fungous diseases. These problems are now being worked out by special experts from the United States Department of Agriculture, so far with fine results, after which it will be up to the states and counties interested to protect the industry by means of proper sprays applied at the proper time."

Probably there is no way of preventing the formation of scum which is universally found on cranberry vines in the spring. It is a growth or accumulation that comes from long submersion in the more or less stagnant water of the winter flooding. The longer the vines are kept under, the greater the amount of scum, and the more difficult to remove. Instead of holding the winter flood till late in May as was the general custom years ago, many successful Wisconsin growers now let the water down, exposing the vines in March or early April. The vines then have the benefit of spring rains which wash off and remove this scum before it has become so thick and tenacious, leaving the vines in a clean and healthy condition, and before there is any start of new life or growth. Early in May bogs are reflooded and kept under a week or ten days, from the ponds or reservoirs which have also been freshened and improved by the rains of early spring.

An excellent treatise on currants and gooseberries has been issued by the U. S. Department of Agriculture. It appears about three months too late to be of the highest value this year but it is well worth reading and preserving. Ask for Farmers' Bulletin 1024, Currants and Gooseberries. A postal card request will bring a copy.

Spray Materials

Prof. R. B. Cruickshank, Ohio State University

New materials and methods for the control of insects and diseases are constantly appearing, and if any of these offer the fruit grower a saving in money or time they become a matter of immediate interest.

Arsenate of calcium, as a substitute for arsenate of lead, is beginning to attract attention. Manufacturers have been gradually improving it for the past few years and it promises perhaps to be a spray material which will do the work of arsenate of lead at less cost. Calcium arsenate runs 10 to 12 per cent higher in arsenic oxide than lead arsenate powder and at least 50 per cent cheaper. Using the calcium arsenate at the rate of 1 pound to 50 gallons, this would mean a saving of about 15 cents per 50 gallons of spray. Calcium arsenate has been found to be effective against codling moth perhaps does not stick as long as lead arsenate, does not injure foliage when used with either liquid or dry lime-sulphur, Bordeaux mixture or lime. In Maine, for the past two seasons, the percentage of merchantable apples has been decidedly in favor of the arsenate of calcium as compared with arsenate of lead. A general and universal recommendation of this material would be dangerous, but it is certainly worthy of trial by growers as it holds the possibility of a considerable saving.

Dry Lime Sulphur

Shewin-Williams' dry lime-sulphur is also attracting attention because of greater convenience in handling. It is a true lime-sulfur depending upon sulphides and polysulphides for its fungicidal and insecticidal properties. New York reports about 10 per cent more scab with dry lime-sulfur as compared with the standard liquid solution; Michigan reported about the same difference last year in the face of a heavy scab infection and 1 per cent difference this year with a light scab infection on the checks; Wisconsin's tests this year shows good scab control, compared with liquid lime-sulfur and Bordeaux mixture and the check trees were three-quarters scabby; Ohio has been able to control scale and scab, but has had no opportunity to give it a severe test. In several instances it was suggested that it ought to be used one-half again as strong as recommended by the manufacturers for the best results. In fact in Maine, when used at about 3½ pounds per 50 gallons in two seasons, it did slightly better than liquid lime-sulfur. On account of its greater cost it will probably not be used this year by large growers, but it appears to have a place for the man who uses less than a barrel of lime-sulfur during the season.

Dusting is also a matter of interest just now because of its time saving factor. Results in different States show wide divergence as regards efficiency, and the cost of materials is high. However, dusting is being done by more and more men each year. I believe large growers will provide themselves with dusting outfits for emergencies at least on account of their speed. The spray gun, however, has done much to check that tendency in Ohio in the past two years.

Keep garden tools bright and sharp. They will work easier.

By, By, Barberry

No. 278, A.] [Published May 19, 1919
CHAPTER 189, LAWS OF 1919

AN ACT to create section 1494—9a of the statutes relating to the eradication of the harmful species and varieties of barberry and other plant species which act as hosts or carriers of dangerous plant diseases or insect pests.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. There is added to the statutes a new section to be numbered and to read: Section 1494—9a (1) No person, firm, or corporation shall receive, ship, accept for shipment, transport, sell, offer for sale, give away, deliver, plant, or permit to exist on his or its premises any plant of the harmful barberry, or any plant of a species that shall be designated by the department of agriculture in published regulations to be a host or carrier of a dangerous plant disease or insect pest.

(2) The state entomologist of the department of agriculture and his deputies are hereby empowered to eradicate and such plant found growing in the state. If the owner shall refuse or neglect to eradicate such plants within ten days after receiving a written notice, the expense of such eradications shall be assessed, collected, and enforced against the premises upon which such expense was incurred as taxes are assessed, collected and enforced and shall be paid into the treasury of the state.

3) The term "harmful barberry" shall be interpreted to consist of any species of Berberis or Mahonia susceptible to infection by Puccinis graminis, commonly called black stem rust of grain, but not including Japanese barberry, B, thunbergii, which does not propagate the rust.

(4) The penalties provided in section 1494—10i and all other applicable provisions of section 1494—1 to 1494—10i, inclusive, shall govern and apply to the enforcement of this section.

Section 2. This act shall take effect upon passage and publication.

Approved May 15, 1919.

COPY LAW.

One of the most successful market gardners about the twin cities began years ago to give his boys and girls when they were small, an interest in his business, and as men and women they carry on the business today, not one of them wanting to leave it.

AMONG WISCONSIN BEEKEEPERS

The Wisconsin BeeKeepers Page
Prof. H. F. Wilson Editor

Buying Bees

By S. B. Fracker, Acting State Entomologist

When David Harum and his horse-trading friends of the old days found a perfectly good specimen of horse-flesh going lame, he proceeded to dispose of the animal as soon as he could. A favorite outdoor sport of that time was horse trading in which the winner was the man receiving the highest price for the poorest animal. The methods used for concealing heaves, lameness, and disease were the stock in trade of horse-owners and were considered perfectly honest—unless practiced on Sunday!

While the art of horse-trading has now given place to the business of automobile selling in which the same conditions are intensified, the desire to dispose of livestock on the farm when something begins to go wrong with it is still strong. Is beekeeping an exception to the rule? After gathering honey from on apiary for five, ten, or twenty years, do a few unprofitable seasons and a succession of winter losses, followed by "spring dwindling," cause many beekeepers to try to sell out at a good price? When something "seems to be wrong" do they want to "get out from under?"

Foulbrood Distributed by Sales of Bees

One of the results of this trait of human nature is that American foul brood, the most serious trouble with which beekeepers have to contend, has become scattered thruout the state. Disease centers are now known in almost every county in the state except near Lake Superior. Weather conditions and other causes are often blamed for losses really due to disease and whole townships have been found in which beekeeping had been practically wiped out without a single beekeeper suspecting the cause of the trouble.

From the first appearance of disease in Jefferson county over forty years ago it has been transported in all directions, sometimes for long distances. More trouble is experienced in the southern and eastern counties than in others but with foulbrood so widely scattered no beekeeper can consider himself immune.

With one infected apiary in a township the spread is rapid. Mr. Smith, finding beekeeping pays well, buys up a few more colonies from the next county and brings them home. The next year his bees are not doing so well and the following winter many colonies fail to survive. After trying one more season, usually not suspecting the cause of the trouble, he advertises an apiary for sale and distributes infected supplies and hives to six neighbors. They in turn find honey production unprofitable and pass their troubles on to others. In two townships in Richland county, in which these conditions were studied, practically every case of foul brood had arisen thru the purchase of bees or used bee supplies.

New Inspection Law

A law prohibiting the sale of bees or used bee supplies without a permit or inspection certificate from the apiary inspector of the state department of agriculture has just been enacted at this session of the legislature. Foulbrood is now so prevalent that no beekeeper can afford to purchase any bees or supplies except from apiaries known to be healthy. Nor should honey purchased on the open market ever be fed to bees.

American foulbrood can be thoroly cleaned up in an apiary and that has been accomplished hundreds of times in all parts of the United States. Only the brood in the comb is diseased and the adult bees do not carry the infection to a new clean hive if they are compelled to use all the honey in their honey-sacs at the time of transfer in the manufacture of comb. The cure results, however, in the loss of the comb and frames and necessitates burning out or boiling the old hives. Can any apiary owner afford to run the risk of purchasing old combs and hives when the most likely result will be either the loss of the bees thru disease or the somewhate expensive and laborious treatment?

Wisconsin Holds Records

Wisconsin holds two beekeeping records, of one of which she can well be proud. For many years the census shows a honey production per colony higher than that of any other state east of the Rocky mountains and sixty percent higher than the average for the country as a whole. In 1900 and 1910 she was the seventh state

in total honey production and thirteenth in the number of colonies from which this production was derived. During the last few years, on the other hand, the U. S. department of agriculture reports that more samples of American foul brood were secured from Wisconsin for diagnosis than from any other state. Unless the present campaign results in lowering the latter record, the former cannot be held for long.

When hog cholera breaks out on a farm it usually cleans up that place by killing all the hogs. In the meantime, the neighbors have an opportunity to vaccinate all their own animals and otherwise protect their property from infection. Foulbrood in bees does not work so rapidly and the infected apiary may remain a disease center for years especially if neighbors will buy the infected hives. Why a beekeeper will invest in the hives and combs of an apiary in which the bees have died or become weakened when he would not think of purchasing the unwashed bedding of an acquaintance who had succumbed to smallpox is one of the great unsolved mysteries.

Suggestions

Insist on an inspection certificate for every colony of bees, hives, or used apiary appliance purchased.

Don't try to sell bees or supplies without a bill of health from the inspector.

If "things don't look right" or you find dead brood, write or send a sample of comb to the State Entomologist, State Department of Agriculture, State Capitol, Madison, Wisconsin.

Get ready to attend the BEEKEEPERS' SCHOOL AT MADISON, August 18 to 23. Dr. Phillips and Mr. Demuth will be the instructors with a few local men on the program.

The Maple Honey Co. of Antigo, Wis., is a new corporation formed in Wisconsin to produce and handle honey on a large scale. 1,000 colonies of bees are soon to be working.

Mr. Kenneth Hawkins, formerly with the U. S. Bureau of Entomology, Beekeeping Dept., is now located at Watertown, Wis., and is in charge of the bee department of the G. B. Lewis Co. Mr. Hawkins, through the Lewis Co., is at the service of the beekeepers. Credit for the beekeeper's page in our paper is due to him.

The past year has been one of great disaster among Wisconsin beekeepers. Last season the honey flow did not appear in the southern part of the state and no crop was secured. Following this failure the bees were not given sufficient stores or else the stores were bad and a good many hundred colonies of bees died during the winter. Better beekeeping would have prevented this.

Various Bugs

A member asks about: (1) A worm that eats plum leaves, "leaving only the skeleton of the leaf," and complains that poison does not kill them; (2) About plum curculio; (3) and Buffalo Treehopper; (4) Also raspberry insects.

Dr. S. B. Fracker, state entomologist, answers as follows:

(1) From your description I should judge that the worm attacking your plum trees is the Cherry Slug *(Caliroa cerasi)*. While common on apple and cherries, this insect does not usually trouble plums. It should certainly be controlled by arsenate of lead which kills all the cherry slug on cherries within a few hours. Either you are not using the arsenate of lead strong enough or your spray pump is not efficient enough to cover thoroughly the surface of the leaves.

(2) The spraying program given for plums will control the curculio in the home garden. In order to prevent reinfestation of the trees, be sure to gather the fallen plums and destroy them.

(3) The Buffalo Treehopper is an insect about one-fourth of an inch long, of very peculiar shape impossible to describe. It is usually more injurious on young orchard fruits than on raspberry canes. When weeds and grass are growing beneath the trees or adjoining them, the insect often does a good deal of damage by making slits in the twigs and branches of the young trees and many even seriously injure trees of bearing age. There is no control measure except freeing the neighborhood of the weeds on which the young hoppers develop.

(4) Several different insects of entirely different life history attack raspberry canes by making punctures and depositing eggs in the canes. The two most common in your part of the state are the snowy tree cricket and cane borer. In every case the only satisfactory control measure consists of the destruction of the cane attacked.

Wisconsin Horticulture

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Fort Atkinson for the Summer Meet

The summer meeting of the State Horticultural Society will be held in Fort Atkinson in August. The dates have not been fixed yet but will be announced in the July number of this paper.

The meeting has usually been held the third week of August and it is quite likely that week will be selected.

Altho Fort Atkinson's invitation for both the 1917 and 1918 meetings were turned down in favor of other places the Fort people were good sports and finally won.

The selection promises to be a perfectly good one. So far as the records show no Society meeting has ever been held in Fort Atkinson or nearby. It is the home of a big nursery; small fruit growing is well advanced in the neighborhood altho tree fruit growing is not an important industry. For real "pep" and completeness of detail in organization as well as in final results, no city or town excelled Fort Atkinson in War Garden work. After the War Garden committee had, by persuasion or force, induced everybody without exception to plant a garden, they set a hen in every back yard and raised innumerable broods of chickens. While the local committee has not yet reported, we have no doubt they have a hen or two on for us.

Apple Buyers Convention

The Annual Convention and Apple Exhibit of the International Apple Shippers Association will be held in Milwaukee, August 13th to 16th.

The association is composed of apple buyers thruout the United States and Canada and maintains its home office in Rochester, N. Y.

The very able secretary, R. G. Phillips, knows at the beginning of the buying season how many barrels and boxes of apples there are in the country, where they are and their condition.

In the beginning of the organization there was a certain air of exclusiveness about it, only buyers were welcome and there were many sessions, some open to the public and some not so open.

Of late years, however, the whole attitude of the organization has changed and growers as well as buyers are welcome. In fact, many of the members, Senator Dunlap for one, are growers as well as buyers.

The I. A. S. A. might easily have given the War Boards which were formed for the purpose of fixing prices some valuable pointers had they been so minded. They could have warned them that any price fixing agreement would last just as long as it took the fixers to get back home and get into the field to underbid the other fellow.

The writer has attended the meetings of the I. A. S. A. for several years and has discovered no attempts in recent years at price fixing. Such a plan simply wouldn't work anyway and these big operators are wise enough to know it. The crop reports secured at the expense of the association are availabe only to members to which no one can seriously object. Aside from that there is no "inside" dope, there can be none.

These men who handle millions of barrels of apples buy them for cash, place them in cold storage in Chicago, St. Louis, Buffalo and other places and sell them as demanded by the small wholesalers and retailers. There is, no doubt, usually a profit in the transaction and these buyers are surely the "middlemen" so generously cursed by reformers. But until some one is wise enough to provide a better plan, possibly state owned storage plants, the cash buyers perform a valuable service to the grower. They provide a market for apples that is unlimited and the price, on the whole, is governed by the supply.

Wisconsin apple growers can well afford to attend this convention and get acquainted with the buyers.

Apple and plum trees make good ornamental trees for the back yard. Their fruits in the fall are more than ornamental.

The National (Pack(ed)) War Garden Commission

The National War Garden Commission appeared suddenly and without warning along in 1917 with a flood of literature, expensively printed and lithographed garden pamphlets and posters, traveling representatives each supplied on arrival with "ready to use" newspaper interviews and, apparently, some millions of money.

If other states have been as well supplied with this literature as Wisconsin, it must have cost somebody a pretty penny. The booklets on gardening are cunningly built, some part of each is certain to apply somewhere in this broad country of ours,—can't miss. For the most part they are compiled from U. S. Department bulletins and are rarely of local value. The striking part of the whole plan is the glorifying of one Charles Lathrop Pack. No newspaper interview or contribution to the garden column mentions our saviour Pack less than three times. Rumor says that the whole enterprise is financed by Pack who has made a few millions and now wants his name immortalized. This may be an injustise to the gentleman but he certainly has **some** press agent. In spite of all this the Commission is undoubtedly accomplishing great good.

Scat

Will you please contemplate the city cat in all her cussedness. She weaves not neither does she spin but between excursions to garbage cans and associating with other disreputables of her kind she is climbing trees and porches to rob song birds' nests.

Of course this is true of every cat except your own particular beribboned and cream fed pet but if you doubt that your darling kills birds just watch her. Never a cat lived but would kill birds and for this the cat is not to be blamed, its the cat's natural inheritance. The blame lies in keeping cats where birds are wanted.

The cat, unlike the dog, never develops affection nor any trait that is appealing.

Well fed cats are poor mouse-catchers. Starved cats prey on mice and sometimes on rats. A five-cent mouse trap will dispose of more mice than a cat.

Cat skins are now extensively used by furriers. Write to dealers for prices.

Fleur-de-Lis

The National Flower of France

I notice with great satisfaction that some Iris growers, specialists and dealers, have been very progressive in one respect in that they have cut out the word "German" in describing or referring to the bearded or flag Iris, Fleur-de-Lis, or Lily of France. A few growers have renamed it Liberty Iris, which is a happy thought and perhaps more appropriate than calling it German. The French long ago adopted the Fleur-de-Lis as their national flower and glorified it. The bearded Iris is widely known as the Fleur-de-Lis and it might be prudent to let it go at that for awhile. It is much fairer to France than to call it Liberty Iris. Some specialists have even cut out Germanica, as the botanical classification, which is also a good idea, for just as soon as it is referred to as Iris Germanica, people will call it German, a natural result. It is not German in origin. It was a mistake originally to call the species Germanica, and there has been confusion ever since. If the bearded Iris should be named after any country it certainly should be France, for it appears that there have been more named varieties derived from France than from any other country, certainly, at least, as many. Not to give the French word Fleur-de-Lis a prominent place or specifically mention it as a heading would take from France the universal renown of being known as the home of the most beautiful species of Iris. So why not "let well enough alone," and why not let France retain this honor by restoring the poetical, romantic and charming French word of Fleur-de-Lis?

"O flower de luce, bloom on, and let the river
Linger to kiss thy feet?
O flower of song, bloom on, and make forever
The world more fair and sweet."
—Longfellow.

H. W. Groschner,
In the Grower.

Old Arsenate

Q. "Will arsenate of lead bought last year be good for spraying this year or must I buy a fresh lot?"

Ans. Arsenate of lead does not deteriorate and may be kept indefinitely without loss of killing power.

During the months of June and July the editor should receive an average of two letters a day asking for a remedy for the striped cucumber beetle if the record for other years is equalled. All such inquiries are answered and this year the answer will be a marked copy of this issue. Read the article by Mr. Dudley.
It answers your question.

Cut out the old canes of spiræa Van Houttei when they are through flowering or use some of the sprays for cut flowers. It is a good plan to prune all spring-flowering shrubs when they are thru flowering.

THE INSECT PAGE

Conducted by the Department of Economic Entomology College of Agriculture

The Striped Cucumber Beetle

(Diabrotica Vittata)

Life history and habits: As soon as cucumbers, squashes, melons and other cucurbits are up, the ravages of the striped cucumber beetle (see cut) will again be noticed. Indications point towards its presence in great numbers this

The Striped Cucumber Beetle (Enlarged 25 times)

year and the fight against this pest so hard to control, should be started just as soon as plants break through the ground.

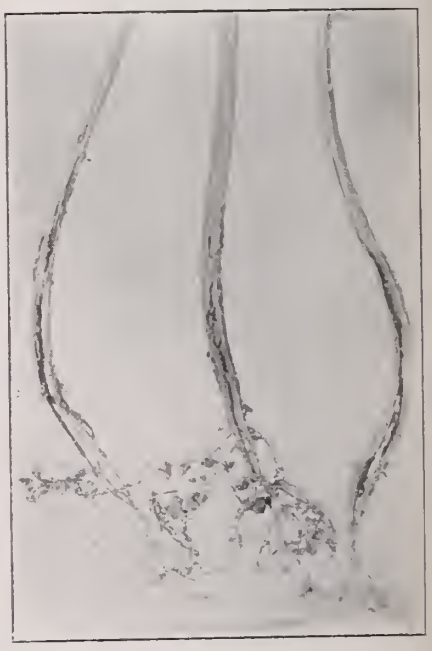
The beetle (adult) spends the winter in masses of weeds and rubbish, appearing again about the Middle of May. From this time until cultivated members of the cucumber family are up the insect feeds on wild cucumber and various weeds, meanwhile laying quantities of eggs thereon. Eggs hatch in from 7 to 10 days, the worms (larvae) immediately eating the stems of the food plant, there well protected from enemies to remain and feed until ready to transform into the resting (pupal) stage. In this stage also the insects are safe from attack in their earthen cells several inches below the surface of the ground. It is practically impossible to use control measures while the beetles are feeding and breeding in waste places, consequently the thousands of eggs laid on weeds developing into beetles in some 50 days or about the middle of July fly to commercial crops to augment the over-wintered beetles already there.

By far the greatest feeding damage to cucurbits occurs just after they have come up. After the vines have commenced to run the feeding damage by beetles is seldom severe and as soon as blossoms appear they feed largely in them to the neglect of the leaves. It must be remembered, however, that more eggs are being laid and the larvae although unseen are destroying the stems and roots of the vines (see cut).

To add to the feeding injury caused by the adults and larvae, what creates the greatest loss of all are the diseases transmitted to the vine by the beetles—the mosaic disease and bacterial wilt. Thus control of the insects becomes of supreme importance and has been found to be as baffling as it is important.

Control: Cucumbers, melons and squashes can be protected from damage in small gardens by the use of cloth and screen wire cages kept over plants from the time they come up until they fill the cages. So far this is the only practicable means of preventing damage that has been established.

A great many substances such as lime, tobacco dust, wood ashes, sulfur, naphthalene have been recommended to repel the beetles, and arsenical sprays have been used to kill them, all with varying success. From three year's work at Madison on control of the cucumber beetles, in which a large number of substances—dusts and sprays—have been tested, the fact has been forced out that no treatment experimented with will con-



Showing injury to roots of cucumber by larvae.

sistently repel or kill the insects. In fact seldom has a dead beetle been found on or beneath any treated vine. Bordeaux mixture 4-4-50 combined with arsenate of lead 2-50 has proved to be the best spray in partially repelling and killing the insects and in delaying the appearance of the diseases. Therefore this spray is recommended as the best means of control on large vines, yet discovered. Dusts have in the main proved to be of little temporary value.

John E. Dudley, Jr.

Watch for Potato Beetles

The hard-shelled striped potato beetles are already beginning to make their appearance and will soon lay their orange-colored eggs in masses on the under sides of the leaves of young potato plants. Almost before one realizes it, the pinkish-red larvae or "slugs" will hatch from these eggs and will begin to feed on the tender tips.

Important. Spray when the "slugs" first begin to hatch. Don't wait until the plants are partly eaten. Every leaf that is eaten reduces the potato yield.

Sprays to use. Lead arsenate, calcium arsenate and zinc arsenite are all effective and stick to the foliage better than paris green. The last two are cheaper than the first. They should be used at the rate of two pounds to two and one-half pounds of the powder to 50 gallons of water and 50 gallons should ordinarily cover an acre.

Paris green may also be used at the rate of one pound to fifty gallons of water with the addition of two pounds of slaked lime. Paris green often causes burning, does not stick to the foliage as well as the former three, and does not show white on the plants.

The poisons may be added at the same rate to Bordeaux mixture where this is used against flea beetles and blight.

Applications. The spray should be applied when the young first begin to hatch and should be repeated as necessary. Ordinarily two applications per season are enough.

Cover all parts of the plants. Unsprayed parts give the "slugs" a chance to feed for some time before they reach the poison.

L. G. Gentner.

The Raspberry Beetle or Byturus

A small, slightly hairy, light brown beetle, about one-seventh inch in length is causing considerable damage to the buds and tender leaves of the raspberry in Wisconsin this year, especially about Madison. As soon as the blossoms appear they are also attacked, the stamens and pistils being eaten off, and thus often causing a total loss of the crop.

These beetles lay their eggs in the blossoms and as soon as the eggs hatch the young grubs carry on the destructive work started by the adult beetles. When abundant many of the grubs adhere to the berry at picking time, making it necessary to carefully handpick the fruit intended for table use.

These beetles need not cause any alarm if proper control measures are applied as soon as they are noticed. **Spraying** is the best method to get rid of this pest, using 2 pounds of **powdered arsenate of lead** to 50 gallons of water. It should be applied very thoroughly, especially to the young growing tips. **NOW** is the time; the beetles are already working, so make a thorough examination of your red raspberries (they do not seem to attack the black varieties) and if you find the beetles do not delay the spraying.

Charles L. Fluke, Jr.

Cutworms are Injuring Plants

Already many young plants are being cut off by cutworms. This is especially true on land that was in sod last year. Growers should watch their fields and gardens closely and where the injury shows up should immediately broadcast poison bran mash in late afternoon or early evening at the rate of about 5 pounds per acre.

The poison bran mash is made up as follows: Thoroughly mix one pound of Paris green or white arsenic or two pounds of lead arsenate with 25 pounds of bran. Dilute two quarts of low grade molasses with two or three gallons of water and add the juice and pulp of six finely ground lemons or one ounce lemon extract). Stir this into the bran, adding more water, if necessary, to make a crumbly mash.

A small number of plants may be protected by placing either stiff paper collars or tin cans with tops and bottoms out around the plants and pushing well into the soil.

L. G. Gentner.

Controlling Asparagus Beetles.

Asparagus beetles may be satisfactorily controlled by dusting the infested plants with fresh air-slaked lime, according to entomologists at the Ohio Experiment Station. The treatment has the best effect if applied in the early morning when the plants are damp with dew.

On large areas plants to serve as baits may be allowed to grow at intervals in the rows. These plants may be treated each week by dusting with arsenicals or the plants may be cut and burned. Plants dusted with poison must not be used for food.

On new beds spraying or dusting with arsenicals will kill both the adult and larval forms of the beetle. The dust commonly used for this is four pounds of arsenate of lead to one barrel of air-slaked lime or plaster.

Watch the red cedar trees for signs of cedar apple, a yellow or orange colored mass of material. This is one form of the rust that has injured many apple orchards. Cut this off the trees and destroy it or take the whole cedar tree if you would have good fruit.

"Lady Bugs" Beneficial.

In the Market Grower's Journal of April 1, F. H. Bateman, of Camden County, N. J., speaks of "lady bugs" eating his cucumbers. There are several bugs that eat cucumbers but not the "lady bugs." The true "lady bug" eats nothing but plant lice. The "lady bug" is not a bug at all but a beetle that is the most helpful insect we know anything about. The most common kinds are orange with black spots and red with black spots. There are others that are black with two red spots. The government thought so much of the "lady bugs" that they imported some from China, propagated them and distributed them for the control of scale. If farmers would only study nature a little and find out what bugs and birds help them, they would be better off.

Neal Demarest, N. J.

A Good Spray Pump Wanted

Q. "Kindly give me the name of a good spray pump for home garden use. Compressed air sprayer desired."

Ans. There is no good compressed air sprayer either big or little. The large orchard sprayers geared to the wheels of the wagon were much in favor at one time but have been wholly discarded. Other types having compression tanks, etc., are also on the discard or on the way. Most of the small compressed air sprayers are so cheaply built that they develop leaks before the first season is over. These pumps usually consist of a metal cylinder, a bicycle air pump and a short hose. The container is partly filled with spray material, the top clamped down and pressure obtained by operating the little air pump. By hard labor about 50 lbs. pressure can be secured, most of which is lost before the tank is empty.

The most practical and efficient type of pump for home garden use is the "bucket" pump, a small direct action pump set in a pail and provided with clamps, foot rest, etc. Usually about six feet of hose is furnished with the pump which is enough only for vegetables, currant bushes, etc. For spraying small trees and for economical work in the garden an extra section should be added.

For orchard use nothing smaller than a barrel pump should be used.

The Spray Gun

Prof. R. B. Cruickshank, Ohio State University

Perhaps the one outstanding saving effected during the past season was by the use of the spray gun. The spray gun happened in the nick of time and proved to be a godsend to the hard pressed grower who had sufficient pioneering spirit to buy one even in the face of what seemed to be a big price. The spray gun has definitely proven its value, to the fruit grower with a power sprayer, in three fundamental ways—in the saving of time, in the saving of labor, and in the saving of spray material.

People are usually slow to adopt new practices, especially when those practices are opposed to current conception, but the spray gun has been taken up by growers all over the country in a brief time. It came, it was seen, it conquered.

Of course, doubts and objections were advanced. In the first place, some said that it could not do the amount and quality of the work claimed for it. It sounded too good.

One objection raised was that it would not force the spray into the calyx at the time of the first codling moth application. We had been using angle nozzles and laboring under the supposition that the material must be sprayed into the blossom cup with considerable force. Probably that is correct with the ordinary nozzle, but the spray gun seems able to diffuse such a fog of spray throughout the tree that plenty of poison is lodged in the place where it will be most unhealthy for the apple-worm. Answers to a questionnaire which I addressed to a large number of growers recently were practically unanimous in that they had fewer worms than usual.

Another point of practicability raised was the possible injury to the fruit and leaves, due to very high pressure used. There have been but few instances of any such injury, and in all cases this has been traced to the fact that the gun was held held close up and the spray dashed into the foliage on "high." If the operator is working rapidly and does not care to shut off the gun too much, he should endeavor to spray the lower side of the tree at some distance, gradually going higher as he approaches the tree.

The matter of the amount of spray has also been answered in a way complimentary to the spray gun. Except in the early work before a man becomes accustomed to it, the usual answer is that the gun uses less material than the nozzles. Some growers have experienced an economy in spraying even fairly small trees.

I believe that where lack of control of orchard pests has been experienced, the cause may be assigned to application at a time just aside from the critical one, to the use of too low a pressure or to

lack of thoroughness on the part of the operator. All these apply equally to the rod and nozzle. The great danger in the use of the spray gun verily appears in its great capacity. It may lead men to an undue elation and an unconscious carelessness, resulting in the trees getting the proverbial "lick and a promise." I have found but two men in Ohio who, after a fair trial of the gun, are willing to go back to the rod and nozzle. The first man's reason was that "he couldn't work fast enough to keep up with the gun;" and the second one's was that "the spray men could not keep from getting themselves drenched and so preferred the long rods." In opposition to this objection most men have found that it was easier to keep out of the mist.

Power Sprayers

The spray gun is efficient only as an accessory to a power outfit that is capable of maintaining about 200 pounds pressure. Some men use them with less, most men prefer more.

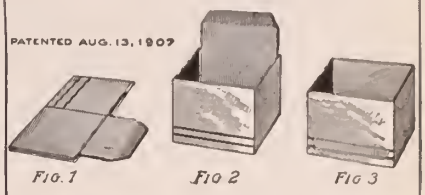
This immediately brings up the question of the power sprayer to the man who does not possess one. We believe in Ohio that a man who has as few as five acres of orchard can afford to buy a power outfit. I have known men to make them pay and pay well on three acres. The introduction of the spray gun had added another argument for the power sprayer. In comparison with a barrel outfit, the power sprayer is more rapid, more efficient, a saver of time, temper, labor, and material. The man who is still handicapping himself with a barrel sprayer has no cause to complain about the scarcity or high price of labor. For him the power sprayer offers a definite economy.

The tendency even in the hilliest of orchard sections is toward the larger more powerful machines. If there is a question as to the advisability of buying a duplex or a triplex machine, it should be well considered before choosing the lighter one.

Must Increase Plantings

Taking the United States as a whole there has been very little planting of apple trees since 1910. Comparatively few young trees, therefore, are coming into bearing at this time. This is shown by an investigation of the commercial apple industry recently made by the United States Department of Agriculture. Indeed, the largest single commercial apple-producing section of the United States has reached its maximum production, and unless the planting rate increases a decline is to be expected.

That region is western New York, which, early in the sixties, became and has since remained the center of commercial apple production in the United States. Western New York has produced regularly about one-fourth of the normal commercial apple crop of the county. But most of the present bearing trees were planted in the late sixties and early seventies and are now nearly 50 years old. Vigor and productivity continue longer in western New York than anywhere else in the country, perhaps, yet they can not be maintained indefinitely, and the center of production may be expected to shift. Similar declines are taking place in what is known as the New England Baldwin belt, including portions of Maine, New Hamp-



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shire, Vermont, and Massachusetts, but as this has never represented more than 5 per cent of the total commercial production it is of relatively less importance.

Other Production Centers

In latter years two comparatively new commercial apple regions have come into large production—the Pacific Northwest and the Shenandoah-Cumberland region of Virginia, West Virginia, Maryland, and Pennsylvania. The former is producing now almost as many commercial apples as New York, and the latter is producing about half as many. Roughly speaking, New York, the Pacific Northwest, and the Shenandoah-Cumberland produce about five-eighths of all the commercial apples grown in the United States. The Shenandoah-Cumberland region is yet only approaching its maximum production. In the Northwest there was considerable planting of unsuitable lands, but western production is being stabilized and will continue to be an increasingly important factor in the apple industry.

Other regions of considerable commercial apple production are the Piedmont district of Virginia, the Hudson Valley, southern Ohio, western Michigan, southern and western Illinois, the Ozark Mountain region of Arkansas and Missouri, the Missouri River region of Iowa, Missouri, Kansas, and Nebraska, the Arkansas Valley region, California, and Colorado.

Investigation of commercial apple production was begun by the Department of Agriculture in 1917, and a survey has been made of every important apple-producing county in the United States. As a result of this investigation, a carefully organized system has been perfected for issuing regular monthly reports during the growing season, forecasting commercial apple production. This service has been extended to peaches, and soon will include pears and other fruits.

—Weekly News Letter.

Cash for Blueberry Plants

After a thorough investigation of the matter, Wisconsin Horticulture believes some of its readers will be interested in assisting the following work to a limited degree.

For several years past, Mr. F. V. Coville, of the United States Department of Agriculture, and Miss Elizabeth C. White, of New Lisbon, New Jersey, have been cultivating blueberries and working to produce new and better varieties. To get new varieties they find the very best wild bushes and then cross-breed these wild plants. The seeds resulting from the cross breeding grow into all sorts of new varieites, just as seedling apples are seldom like the tree they came from. Many of these new varieties of blueberries are poorer than their parents, but about one in a thousand turns out to be much better than either parent and makes a promising new variety.

About ten years ago the Department of Agriculture published Mr. Coville's first work on blueberry culture. His most surprising discovery was that blueberries cannot live in a well-balanced, fertile soil. They require a sour or acid soil and are actually killed by the application of fertilizer which would be the best possible food for ordinary plants. Some years ago a wild blueberry plant was found in Massachusetts with berries an inch in diameter, but it was killed by people who attempted to force its growth with concentrated fertilizer.

Since 1911 Miss White, at New Lisbon, New Jersey, has been raising new varieties and the best wild plants that could be found. She is now trying to find a number of wild plants for use for this work. She already has a few plants that have berries three-quarters of an inch through, and

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hopes to secure hybrid berries an inch in diameter. She will pay $50.00 for especially fine wild plants with very large berries.

But it is not only the size of the berry that counts. Miss White is willing to pay smaller prices for plants that have many berries of slightly smaller size if these berries are of unsually fine flavor. Some bushes bear much more heavily than others. On some bushes the berries stick so tight that when they are picked a piece of stem pulls off with the berries, or the berry is torn and the juice leaks out. On other plants the berries come off the stems just right. Berries from some bushes spoil soon after they are picked, while others will keep for a week. Some berries are black and others of a beautiful light blue color. There are doubtless thousands of bushes in the country with berries three-quarters of an inch or more in diameter, and many other bushes with berries just a little smaller but of unusually fine quality, but it is only by having people on the watch for them that these fine bushes can be discovered.

Miss White will send full directions, with measuring gauges, and bottles of formaldehyde for mailing large berries that are discovered.

Pruning—Why and How.

J. V. Beyer

Is it possible that a tree would have two kinds of sap, one kind to make wood and another kind to make fruit? My readers must admit that this is not possible, no more so than that the humans or animals would have two kinds of blood in their bodies, one kind to make flesh and fat and another to make bones and tissues.

If this is true that the same sap in a tree that makes wood also makes fruit, then all we have to learn is how to direct the sap so the tree must make fruit, and that that is what we are pruning for. If we are watchful we will find that most trees will prefer to make wood rather than fruit. There certainly is a reason for this, but I will not go into detail on this part of the subject, as this would lead me away from what I mainly wanted to speak to you about.

Another fact is that certain varieties of apple trees make more wood than others and therefore have to be pruned heavier. All the aforesaid points to the undis-

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puted fact that if we want **fruit** we **must prune.**

The next point to discuss is how to prune, merely cutting wood from a tree could not be called pruning by a professional. In pruning a tree, there are several important points to consider. As everything in the world is limited, so is the sap of a tree, therefore we must direct the sap to the main branches and allow no suckers to grow on the insides of large branches and even if the sucker is old enough to bear, for if we do we will find fruit on the main branches small and if large suckers are not removed in time (which can be seen on old trees which have not been pruned for years) the tips of the main branches will not bear at all and sometimes even die.

For my part, I think a great deal of the open head pruning. By this I mean allow no leaders to grow in center of a tree (apple-tree) but trim it so it will have the shape of an inverted open umbrella. This allows the free access of sunlight and air and also makes spraying more simple and thorough, in this way the most important branches get uniform in strength and carry their fruit without braces. Others may say I am wrong but I tried this out and will not go back to the leader tree.

In connection with pruning something else comes to my mind that may be known to a great many treemen, but I have not seen an article where anyone made it generally known, and that is a a handy pruning saw. I use an ordinary 18 inch sickle shaped saw and take the handle off the blade. Then round the edges off of a 10 or 12 foot pole using as a rule a piece of maple flooring, shape it down to two inches, cut a slit in one end of this pole the thickness of the sawblade and insert the above mentioned blade in this slit, care has to be taken to set the blade right in the pole before drilling the holes for the rivets, use the same three rivets to fasten the sawblade as were formerly used in the short handle. With this saw I never have to climb into a tree but prune all my trees from the ground. Every treeman ought to have a saw like this; it saves time, makes it much more convenient and a person being on the ground can also see exactly what branches to cut away.

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Volume IX | Madison, Wisconsin, July, 1919 | Number 11

BLACK EYED SUSAN OR CONE FLOWER

Susan of the Black Eyes lives in low meadows and is strikingly handsome. Her real name is Rudbeckia hirta.

IMPORTING PLANT NOVELTIES

S. B. Fracker, Acting State Entomologist.

An order preventing the importation into the United States of nursery stock and plant material on a commercial scale went into effect on June 1. So many questions have been asked the writer about this quarantine and such bitter criticism has been expressed against the quarantine for provisions it does not in realty contain that it seems best to make a brief explanation of the order and its causes.

Under this quarantine the bringing into the United States of ordinary ornamental shrubs and fruit trees is to be discontinued but permits may be secured from the Federal Horticultural Board in the same manner as heretofore for the entry of fruit and rose stocks, lily bulbs, lily of the valley, narcissus, hyacinths, tulips and crocus. This provision answers the question of a large number of nurserymen and horticulturists, "Where are we going to get our rose and fruit stocks now that the quarantine has gone into effect?"

Perhaps the most important feature of the quarantine consists of its provision for the introduction of plant novelties, new varieties, and necessary propagating stock. Under regulation 14, application may be made to the Secretary of Agriculture for special permits for the importation of nursery stock and other plants needed for the purpose of keeping the country supplied with new varieties and propagating stock. The application must be accompanied by a statement certifying that the plants to be imported are novelties, or, if standard varieties of foreign plants, that adequate quantities for their propagation are not available in this country. Special regulations are made covering plants imported under these permits in order to prevent the introduction of additional insect pests and plant diseases.

The United States has received during recent years so many extremely serious insects and plant diseases that the situation appeared to be a desperate one. In addition to such established pests as the Gipsy and Brown-Tail Moths, against which over one million dollars a year is being spent as a permanent control campaign, the horticulturists of this country could look back only one or two decades to discover the arrival of the citrus canker, which at the expenditure of hundreds of thousands of dollars has now been nearly eradicated from Florida; the chesnut blight which is surely but gradually wiping out the chesnuts of the eastern states; the white pine blister rust which is compelling all New England wood-lot owners to go to the expense of taking out their currant and gooseberry bushes or watch their white pine become valueless; the pink bollworm of cotton which threatened the cotton crop at least as seriously as the boll weevil (the latter, according to the census, having caused the south several hundred million dollars in reduced cotton production); and the European corn borer which has decreased the total corn crop of Hungary 25 per cent and that of some parts of Russia, 95 to 100 percent.

We have become so used to the expenditure of money for insecticides and the loss of crop caused by the imported cabbage butterfly, imported grain weevils, imported asparagus beetle, imported poplar borer, imported currant worm, imported cabbage maggot, and many others that we often do not appreciate the total damage they do. It is hard to believe that the introduction of any new ornamental shrub or of all the shrubs and trees which have been imported since the Civil War could compensate for the damage caused by the insects named. After seeing samples of the Potato Wart recently introduced into Pennsylvania, I feel confident in saying that no conceivable plant introduction could pay Wisconsin for the accidental importation of this disease into the great potato growing regions of the state.

Inspection of plant importations has been and always will be inadequate. Inspectors are looking for the invisible and attempting the impossible in trying to prevent the introduction of plant diseases. The only hope of protecting the horticultural interests from the losses which follow the arrival of imported pests consists of a quarantine against the plants on which they come and their importation, if necessary, under the most careful and severe restrictions.

What Causes "Brown Patches" on the Lawn

Objectionable "brown patches" appear on fine laws, greenswards, and the putting greens of golf courses usually during the hot, moist weather of summer, the disease being most noticable when the weather is hot and muggy, and on ground which is kept too moist by insufficient drainage or heavy sprinkling. The brown spots—caused by a fungus—are at first more or less circular and grow in centrifugal fashion, becoming a foot or more in diameter.

During the early morning many

of the spots are covered with a fine mildew. Later in the day the border of actively growing spots is smoky green in color where the grass leaves are dying. When the disease is abundant and a merging of the spots occurs, an entire putting green often will be completely brown and appear as if dead. Peculiarly enough, with the coming of cool weather in fall most of the infested spots recover, indicating that the grass has suffered no permanent injury. However, occasional diseased spots are completely killed. Apparently the brown spots radiate in the form of a small circle from one unit and continue this process, season after season, until large circles are formed. Occasionally a green spot is found in the center, but usually the whole patch is brown.

Prevention is the practical way of decreasing the damage wrought by this turf disease, according to the United States Department of Agriculture. Preventive measures consist in providing thorough drainage, both of the surface and subsoil. Often in spite of these precautions the disease will appear in warm, wet weather when the excess surface moisture can not be controlled. The growing of turf plants immune or highly resistant to the disease—Bermuda grass in the South and blue grass and white clover in the North—is the ideal method of prevention.

The fescues and the bents, the peers of all fine turf grasses, are markedly susceptible to the "brown patch" disease, although resistant strains are available in both these groups of grasses. It is anticipated by specialists in the United States Department of Agriculture that in the near future resistant strains of desirable grasses for putting green use will be available in amounts sufficient to satisfy all demands.

When a person is sufficiently familiar with the time of appearance and development of the "brown patches" among grass plants to forecast the occurrence of the disease, he can partially control and check its damage by persistent spraying with Bordeaux mixture, in amount just sufficient to moisten the leaves and crowns of the grass, without thoroughly wetting the ground. Frequent applications are necessary. The difficulty attending the use of Bordeaux or any similar fungicide is that as soon as it has been removed from the plants by rain or by continued mowing the fungus breaks out in new places, undeterred by the fungicide which is on the surface of the soil or on the older stems and leaves. Although the expense of using Bordeaux mixture is rather heavy, it will pay the owner to test out this measure of eradication rather than to allow the disease to spread unchecked.

As a rule, mixed grasses on putting greens or lawns are less injured than individual settings of pure-bred varieties. However, mixtures will never result in the fine turf which comes from setting such grasses as velvet bent, carpet bent, or red fescue. Incidentally the high susceptibility of mouse-ear chickweed, or "creeping Charlie" is a special reason for eradicating all patches of these plants from putting greens or high-quality lawns.

The common lawn plants seem susceptible to the brown patch disease in about this order: Mouse-ear chickweed, red fescue, red top, velvet bent, carpet bent, rough-stalked meadow grass, speedwell and yarrow. Frequently, especially in the case of mouse-ear, chickweed and speedwell, the disease does not spread beyond the boundaries of the plant attacked, but in other cases several species of plants may be involved in the same spot.

At one of the leading golf courses in the District of Columbia, where the "brown patch" disease was rampant in 1916, experiments were conducted in 1917 to determine if the trouble could be prevented by the use of Bordeaux mixture. A fine putting green of mixed bent, measuring about 40 by 80 feet in size, was used. The disease appeared on June 13; two days later the green was watered with 300 gallons of half-strength Bordeaux mixture, a small portion of turf being left untreated as a check. No injury whatever resulted to the grass from the use of the Bordeaux. The treated area seemed to improve very quickly and within a week few spots were visible. In contrast, the untreated portion continued to deteriorate and on July 9 was in bad condition, while the treated area showed no signs of the disease. About July 15 the disease again became rampant on the treated area, when it was watered a second time with Bordeaux as before. The results following the second application were by no means as marked as after the first treatment, but were decidedly beneficial. From this experiment, as well as from several similar ones, it seems probable that the disease can be held in check by frequent light applications of Bordeaux mixture.

WANTED—WORK

Married man able and willing to work wants work on fruit farm or market garden preferably where high-grade poultry is kept.

City bred but three years experience on market garden. Wife willing to help in house or act as housekeeper. Address C. Wisconsin Horticulture.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Not for many years has there been so favorable a season for cranberries, as this one up to date. Vines are looking well, and buds and blossoms are appearing much earlier than for the past two or three years. If present conditions continue a most bountiful harvest should be reaped.

Ill health has forced Wm. Sanford to retire from the management of the Arpin Cranberry Co's marsh at Cranmoor. Mr. Sanford has ably filled this position for some years and it is regretted the state of his health prevents continuance. Mr. Harrison Kruger has taken the position and will devote his best efforts to carry on the good work.

Among the late scientifically laid out and operated cranberry marshes is that of the Cranberry Lake Development Company, located near Phillips, Wis.

This company possesses some 2,300 acres of land giving them ample material and facilities to develop and care for in the highest degree the parts of their acreage suitable for cranberry culture. They have 86 acres under cultivation, all developed as scientifically as the most modern and improved methods can prescribe. Of this acreage 22 acres came into bearing in 1918 with a yield of 983 barrels—a most remarkable production for a new planting. This season of 1919, thirtytwo acres more are expected to bear, and should these in turn do as well, the promoters of this plat are surely to be congratulated.

During last year a large number of concrete flumes were built—17 flumes with a half foot base, not counting the wings; 12 with a six-foot base, one, the main flume with a 14-foot base, and a spillway with a 30-foot base. A suitable storage shed 20x80 ft. was also built and another as large will undoubtedly be needed this year to take care of the increased production. Mr. Jas. G. Houghton as Pres. E. W. Clark V. Pres.—Albert Hedler Secy. and Treas. are the present officers of the company, while F. E. Kessel is on the ground as resident manager—these with the experienced advisement of Pres. A. Searls. form a strong combine whose efforts bid fair to achieve great results. The secretary—Mr. Hedler and Mr. Kessel their active manager are both interested members of our state association, and we extend to the other officers and directors of the company an invitation to membership. We believe the $1.00 annual fee is a good investment for any cranberry grower.

AN EXPERIENCE WITH THE FALSE BLOSSOM

My first experience with false blossoms was about ten years ago. I had one and a half acres planted with a popular Wisconsin variety. The soils varied greatly throughout the section. There were spots all sand and in places muck a foot or more in depth.

At that time the vines were young and sending forth runners. On one of the sandy areas I noticed runners which seemingly produced a cluster of uprights upon which there was no fruit. I was informed that these were false blossom vines and endeavored to eradicate them by pulling out those which showed that characteristic, for I believed, at that time, the false blossom vine to be a distinct variety which grew among the vines and if eradicated would leave the vines unmixed. For two or three years I continued the pulling out warfare, and lost out, for finally the entire section seemed to be infested except about ten square rods near the original starting point.

This small area is seemingly warmer on frosty nights being nearer the upland also favored by being near a ditch and probably receives some protection from the blue-joint grass. It always yields a fine crop. Six years ago the acre and a half tract yielded 100 barrels but as the vines took on the false blossom characteristic the yield has rapidly fallen and is now practically nothing. In 1903 I selected about a quarter of an acre and planted to Metalic Bells, my object being to use it as a nursery plot from which to plant other areas. From another marsh I selected a half a peach basket full of vines being sure that each vine, when selected, held a large fine specimen of the variety. I cut each vine into pieces two or three inches in length and planted. With the use of fertilizers and care the vines thickened almost as rapidly as when the usual quantity of vines when the usual quantity of vines are used. The yield has been very heavy until about two years ago when a light spring frost destroyed the tender growth. Believing that the false blossom condition is usually brought on by injury to the

growth, I watched the effect with keen interest. They are rapidly taking on the false blossom condition and I fear the tract will eventually be practically worthless.

In examining false blossom vines I have often noticed a place on the vine where apparently the growth had been injured and consequently deranging the growth procedure. Very likely the roots continued to force nourishment upward into the stem and leaves and the sudden death of the new growth resulted is an abnormal growth of defective uprights incapable of producing fruit.

In my case the condition and nature of the soil does not seem to be a factor. I have tried sanding, fertilizing, pruning, liming, deep drainage, and shallow drainage with no results in again bringing the vines back to their normal condition.

Herman J. Gebhardt.

Has any one an explanation or remedy to offer for the false blossom trouble? Mr. Gebhardt has had a sorry experience. Any light on the subject would be gladly received.

Mr. Nic Wirtz is this year looking after the growing of the crop on the J. A. Cohen marsh in Cranmoor township.

Measurements of Soil Fertility.

By W. H. Jordan.

(From Bulletin No. 424, N. Y. Experiment Station, Geneva.)

1. Nine unlike soils were brought to the Station in quantity from different parts of the state for the purpose of studying the relation of the various methods of chemical examination to their crop-producing capacity.

2. Vegetation experiments were conducted with these soils in the Station forcing house during two years.

3. The soils were submitted to chemical examination by different methods.

4. These soils showed by the vegetation tests greatly unlike crop-producing capacity, the dry matter produced varying in two years from 161.5 grams per box to 9.4 grams per box.

5. By no one of the methods of chemical examination was there established any relation between the amounts of nitrogen, phosphoric acid and potash, either total or soluble, and crop-producing capacity.

6. There appeared to be some relation between the total soluble matter in the soil and productiveness, to the extent that the two soils giving a very low yield of barley showed greatly less solubility than did the others. This relation, however, was not consistent throughout.

7. The general result of this investigation shows that we are not yet in a position through laboratory methods so far devised to measure the fertility of the soil.

Much investigation has been directed toward the establishment of reliable measurements of soil fertility. Many persons seem to regard it as desirable that this be done in order that there may be determined for any given soil its capacity to sustain plant production and its deficiencies that should be met through the application of fertilizing material. It is not certain, however, that it would be of advantage to farmers as a rule, to give to them directions for maintaining soil fertility that are worked out without any initiative or effort on their part. It is true that no request is more often made of this Station than to have a sample of soil analyzed in order to determine what fertilizer should be used to supplement its weak places and to what crop, or crops, it is adapted. There seems to be a very widespread impression that it is now possible by laboratory methods to ascertain just what procedure should be adopted in order to increase the crop-producing power of a given field. This impression persists notwithstanding the repeated assertions from scientific sources that no methods of analysis are now known which will give such measurements of fertility as will constitute a safe basis for practice. Notwithstanding all this, it is regarded desirable from the standpoint of the investigator to establish, if possible, some relation between laboratory results and field results. It was for the purpose of getting additional light in this direction that the investigation herein reported were outlined.

(Then follows a detailed account of the experiments followed by the above summary.)

Nitrate of soda applied to leaf crops occasionally stimulates their growth. Half an ounce to a gallon of water is usually sufficient at a time. When applied dry, 150 to 200 pounds are used per acre.

The wheel hoe makes garden cultivation easy.

Too many plants to the foot is just as bad as weeds. Keep the plants thinned.

Bone meal is a good fertilizer to work into the ground around perennials occasionally.

AMONG WISCONSIN BEEKEEPERS

The Wisconsin Bee Keepers Page
Prof. H. F. Wilson Editor

Two new locals have affiliated with the state associations, Vernon county and Price county. There are only about 25 beekeepers in Price county but they are alive and progressive.

Beekeepers' Chautauqua and School, University of Wisconsin, August 18–23

Program

An opportunity is here presented Wisconsin beekeepers to get the very latest information on modern beekeeping methods. Dr. Phillips and Mr. Demuth of the U. S. Bureau of Entomology will give the main parts of the program and these men are probably better informed on beekeeping than any other persons in the United States today. Arrangements have been made through the University to provide a camping ground with water and fuel furnished and within easy reach of the street car line and lake boats. No better opportunity for a vacation can be found than this school. For those who desire, room and board will be provided near the school grounds. The expenses outside of the traveling to Madison and return will be very small. No tuition will be charged for attending the school. Drop us a card and let us know whether or not you are coming so that we can make such reservation as you desire.

Very truly yours,
H. F. Wilson.

The apiary inspection bill is now a law having passed both houses without opposition. A copy may be had on application to Dr. S. B. Fracker, State Capitol, Madison.

BEEKEEPERS' SCHOOL AND CHAUTAUQUA

August 18 to 23, Madison

PROGRAM

Monday—

8–12 A. M.	Registration to be completed
1:00 P. M.	Fundamentals of Bee Behavior Outside the Active Season (Fall Management)—E. F. Phillips
3:00 P. M.	Fundamentals of Beekeeping Practice Outside the Active Season (Fall Management) —G. S. Demuth

Tuesday—

9:00 A. M.	Fundamentals of Bee Behavior Outside the Active Season (Outdoor Wintering and Spring Management)—E. F. Phillips
10:30 A. M.	Fundamentals of Beekeeping Practice Outside the Active Season (Outdoor Wintering and Spring Management)—G. S. Demuth
1:00 P. M.	Queen Rearing—H. L. McMurry
2:00 P. M.	Practical Beekeeping Extension Work —A. Swahn, Ellsworth
3:00 P. M.	How I Use the Long Idea Hive —Edw. Hassinger, Jr., Greenville
4:00 P. M.	Package Bees and Reports from Attending Beekeepers—H. F. Wilson

Wednesday—

9:00 A. M.	Fundamentals of Bee Behavior Outside the Active Season (Cellar Wintering and Spring Management)—E. F. Phillips
10:30 A. M.	Fundamentals of Beekeeping Practice Outside the Active Season (Cellar Wintering and Spring Management)—G. S. Demuth
1:00 P. M.	Local Conditions Affecting Cellar Wintering in Wisconsin—H. F. Wilson
2:30 P. M.	Successful Methods of Wintering Bees Out-of-Doors and in the Cellar—H. L. McMurry
4:00 P. M.	Out-Door vs. Cellar Wintering —Frank Kittinger, Franksville
7:30 P. M.	Evolution of Beekeeping Practice in the United States—G. S. Demuth

Thursday—

9:00 A. M. Fundamentals of Bee Behavior During the Active Season (The Honey Flow)—E. F. Phillips

10:30 A. M. Fundamentals of Beekeeping Practice During the Active Season (The Honey Flow)—G. S. Demuth

1:00 P. M. Comb vs. Extracted Honey in Wisconsin —N. E. France, Platteville; H. H. Moe, Monroe; L. Francisco, Mosinee; W. T. Sherman, Elkhorn.

3:00 P. M. Advertising and Marketing the Honey Crop —K. Hawkins, Watertown

4:00 P. M. Disposing of the Old Combs and Cappings —Gus Dittmer, Augusta

7:30 P. M. Beekeeping in the United States (Illustrated) —E. F. Phillips

Friday—

9:00 A. M. Fundamentals in Bee Behavior During the Active Season (Swarming)—E. F. Phillips

10:30 A. M. Fundamentals in Beekeeping Practice During the Active Season (Swarming)—G. S. Demuth

1:00 P. M. Factors Influencing Nectar Secretion —E. F. Phillips

3:00 P. M. Locality—G. S. Demuth

4:00 P. M. Obtaining the Maximum Crop in Wisconsin —James Cherf, Antigo

Saturday—

9:00 A. M. Diagnosis and Treatment of Bee Diseases —E. F. Phillips

11:30 A. M. Discussion on Disease Control

1:30 P. M. Field Meet and Picnic Under the Auspices of the Dane County Beekeeper's Association

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Wisconsin beekeepers who are thinking of moving should investigate the northern part of the state because there are great possibilities in that section. While in Price county several yards were visited in which bees were working in the third story. One beekeeper already had 2,000 pounds of surplus from dandelion on June first. Almost a continuous flow of nectar is available from early spring until fall. Early spring flowers are wild cherry and dandelion. The clover flow started about June 10 this year and is slightly preceded by wild raspberry. The white clover and raspberry continues until late July.

The beekeepers of Wisconsin should form themselves into a committee for the investigation of beekeeping conditions in Wisconsin and report them for publication in this paper. Mr. Henry C. Kenning, Catawba, Price county, has just turned in a complete record on winter conditions and blooming period of plants at Catawba, Wisconsin for the years 1917, 1918, and 1919. These records are of unusual value and we would appreciate receiving similar records from any beekeepers who have made such notes. Send them to the secretary.

DON'T FORGET

That the cabbage worm is fond of cabbage, both early and late kinds, and don't be afraid to use arsenical poison preferably arsenate of lead ½ oz. to a gallon of water. While there is absolutely no danger of poisoning so far as the cabbage is concerned home gardeners whose crops are usually mixed and somewhat crowded should exercise care when spraying potatoes or cabbage with arsenate of lead to avoid spraying neighboring lettuce, beets or other leaf vegetables.

Sow seed of head lettuce early in July for a late crop. It will surely head in the cool weather of September.

Slaked lime and tobacco dust either used alone or a combination will surely repel the striped cucumber beetle. Experience proves it.

Don't quit cultivating. Plants need the soil stirred now as much as ever.

If the apple or plum trees are over-loaded with fruit it is a good plan to thin out a part of it.

Trees fifty or sixty feet apart along the highway add to the appearance, and to the comfort of the traveler.

Asparagus should not be cut after June 20. It must have some time to store up a supply of food for next season's growth.

Keep the potatoes well cultivated. Much depends on the way the crop is cultivated. The killing of weeds is not the only purpose of cultivation.

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OUR SUMMER MEETING

The summer meeting, as announced last month will be held in Fort Atkinson. The dates are August 19th and 20th.

The program so far as arranged is as follows:—

Tuesday Forenoon, August 19th

Country parks or Recreation Centers.

This is Prof. Aust's hobby and he will lead the discussion.

Until now parks have been considered as belonging wholly to cities. Why should this be so?

Country boys and girls are coming to depend more and more on the city for their amusements. The

PREMIUM LIST

The following premiums are offered for exhibits of flowers and vegetables, at the Summer Meeting, Fort Atkinson, August 19 and 20.

Class I

	1st prize	2d	3d
10 vases of Asters, 1 doz. each	$3.00	$2.00	$1.00
5 vases of Asters, 1 doz. each	2.00	1.00	.50
Vase Asters, one color, 1 doz.	1.00	.50	.25
Display Dahlias, not less than 5 varieties	5.00	3.00	2.00
Display Pansies	3.00	2.00	1.00
Display Perennial Phlox, not less than 5 varieties	3.00	2.00	1.00
Display of Gladioli, not less than 25 blooms	3.00	2.00	1.00
Display of Annual Garden Flowers	5.00	3.00	2.00
Display Herbaceous perennials correctly named	5.00	3.00	2.00
For best specimens Fuchsia, Rex Begonia, Begonia of any other variety, Sword Fern, Asparagus Sprengerii, for each	2.00	1.00	.50
Best collection native flowers in arrangement and variety; varieties to be shown separately, each with card attached giving both common and botanical name	5.00	3.00	2.00

Class II

Snap Beans, 1 lb.	2.00	1.00	.50
Lima Beans, 1 lb.	2.00	1.00	.50
Cranberry Beans	2.00	1.00	.50
Two Heads Cabbage	2.00	1.00	.50
Six Onions	2.00	1.00	.50
Six Ears Sweet Corn	2.00	1.00	.50
Three Cucumbers	2.00	1.00	.50
Three Muskmelons	2.00	1.00	.50
Six Tomatoes	2.00	1.00	.50
Six Beets	2.00	1.00	.50
Six Carrots	2.00	1.00	.50
Two Egg Plant	2.00	1.00	.50

Class III

Best display vegetables grown by boy or girl under 16, in home or school garden. Twenty dollars divided pro rata.

Best display vegetables from "home" garden by person over 16. Twenty dollars divided pro rata.

Exhibitors in Class III may also show in Class II.

movies and cheap vaudeville are the main attractions in summer as well as in winter.

How many communities have a suitable field for a ball game without trespassing?

Supposing a neighborhood should buy or lease a small tract with an open field for games and a shady corner where all the neighbors could meet Sunday afternoons; suppose,—well suppose the writer stops here and let others tell about it. It's a mighty interesting subject, and in addition to Prof. F. A. Aust the following persons will talk about it.

W. J. Moyle, Union Grove.
H. M. Higgins, Seneca, Ill.
W. Ames, Oregon.
E. H. Niles, Oconomowoc.
Miss Nellie McDonald, Co. Supt. Schools, Oconto.
Mrs. N. A. Rasmussen, Oshkosh.
L. L. Oldham, C. Agr. Agent, Elkhorn.

Tuesday Afternoon

Strawberries: Varieties new and old: Discussion led by Herman Christensen, Oshkosh.

A small fruit survey; Prof. R. H. Roberts. Insects affecting small fruits. Dr. S. B. Fracker.

Herbaceous perennials, new and old; a selection that will furnish bloom from April until November. Discussion led by W. A. Toole, Baraboo.

Recent investigations in cucumber diseases. S. P. Doolittle, Dept. plant Pathology Univ. of Wis.

This ought to make a full and satisfactory day, especially if lots of people come and take part in the discussions.

There is another reason why most everybody should come and that is the program for the second day, which as usual is in the hands of the local people. That it will be a complete and finished program no one doubts. Fort Atkinson is the home of the largest Wisconsin nursery and an inspection of this will be highly profitable as well as interesting. The summer meeting is quite as important and as profitable as the winter meeting and there is the additional advantage of more agreeable traveling conditions.

Fort Atkinson is centrally situated in Southern Wisconsin and for all who have automobiles is merely a pleasant jaunt. On the whole we will, no doubt, have a good attendance and a pleasant time. The details of how we will be entertained by the "Fort" people will be announced next month.

INTERNATIONAL APPLE SHIPPERS' ASSOCIATION

Tenth Annual Apple Exhibit, Milwaukee, August 13, 14 and 15, 1919

GENERAL GROUP CLASSES AND PRIZES

(Open to the World)

For the best exhibit of commercial varieties as representing the section or state from which it comes, and to be composed of not more than five (5) summer, five (5) fall and ten (10) winter varieties the following prizes are offered in each of the Groups specified below:

First prize—Silver Cup and Blue Ribbon.
Second Prize—Silver Medal and Red Ribbon.
Third Prize—Bronze Medal and White Ribbon.

The sections comprising the various Groups are as follows:

Group 1

Provinces of Ontario and	Connecticut
Nova Scotia, Canada	Rhode Island
Maine	New York
New Hampshire	Michigan
Vermont	**Wisconsin**
Massachusetts	Minnesota

Each Group constitutes a class by itself. The fruit entered in any Group will compete against all other entries in the same Group and will also be regarded as entered for the President's Cup.

General Group—Sweepstakes Prize

The two exhibits scoring the highest in each of the above Groups, as determined by the specifications applicable to that Group, will be selected to form a Group Sweepstakes Class. For the best exhibit in this class, the Association offers a Silver Cup, designated the President's Cup. No exhibit, however, will be awarded both the President's Cup and a prize in the Group Classes. The exhibit, therefore, ranking second in the Group which takes the Silver Cup will be awarded the first prize in that Group. The judges, in their preliminary determinations, will, therefore, make one more award than the prize list calls for, to provide for this necessity.

Special Single Plate Classes

(Limited to Exhibitors Showing the Product of Orchards Owned or Leased by Them.)

For the best Single Plate exhibit from the sections constituting the preceding Groups, the following prizes will be offered in each Group and for each of the varieties specified below:

First Prize—Bronze Medal with Blue Ribbon.
Second Prize—Red Ribbon.

GROUP 1—Duchess, Wealthy, Baldwin, Greening, Northwestern Greening, Spy.
GROUP 2—Maiden Blush, Grimes Golden, Jonathan, Ben Davis, Winesap.,
GROUP 3—Williams, Grimes Golden, Rome Beauty, York Imperial, Ben Davis, Stayman Winesap, Winesap, Albemarle Pippin.
GROUP 4—Winter Banana, Delicious, Jonathan, Spitzenberg, Winesap, Newtown Pippin, Rome Beauty, Black Ben Davis.

Each variety constitutes a class by itself and a prize will be awarded for

(Continued on page 156)

THE INSECT PAGE

Conducted by the Department of Economic Entomology College of Agriculture

THE POTATO LEAFHOPPER

Empoasca Mali

Life History and Habits: The potato leafhopper (see cut), formerly known as an apple leafhopper is a very small, greenish insect found on the under side of the leaves of potato and bean as well as some other plants. The adult insects both fly and hop and when

Potato leafhopper. Adult female. Nearly 350 times enlarged. (Orig.)

disturbed dart from one plant to another so quickly that one is apt to overlook them unless they are present in large numbers.

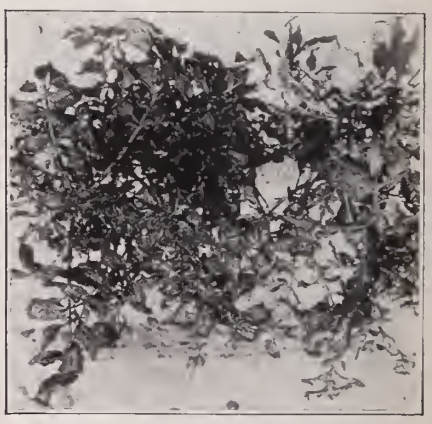
The minute eggs are laid in the midribs and petioles of the leaves or in the stems of the plant. They are so small and so well hidden by the female that it is practically useless to hunt for them. In about ten days the eggs hatch into very small young or *nymphs* looking much like the adults but without wings. These nymphs moult and grow, feeding upon the leaves, until ready to change into the adult stage. There are probably three generations of the insect in southern Wisconsin, the last adults feeding upon potato until frost.

These insects like plant lice have sucking mouth parts and with their beaks suck the juices of their host plants. This feeding injury alone would be in proprotion to the abundance of the insects but should seldom if ever be sufficient to kill whole fields of potatoes. A serious complication has arisen, however, in the establishment, beyond a reasonable doubt, that the leafhopper transmits a disease. This disease, usually spoken of as "tip burn" (see cut) spreads through a plant very rapidly during the hot summer months. Whole fields of potatoes may turn brown and die in a few weeks. It is the disease then that makes vital the control of the insect.

Control: About every ten years the potato leafhopper appears in vast numbers and for a year or two causes serious losses to potato growers. Indications point to a heavy infestation of the insect this summer, heavier even than last year. If the potato crop is to be saved, control measures should be started at once and kept up.

Bordeaux mixture 4-4-50 combined with an arsenical is probably the best early treatment for potatoes and should be applied at least every two weeks. The Colorado potato beetle can thus be controlled and the potato flea beetle and leafhopper largely repelled. In applying the spray the under side of the leaves must be covered to assure protection. This is not a contact spray and does not kill the leafhoppers but tends to repel them and delays the appearance of disease. It is not feasible to attempt killing the adults by spraying, for with their quick movements it is impossible to hit many of them.

Early in July when the nymphs are nearly fullgrown and before any have become adults a thorough spraying with nicotine sulfate (40%) at 1 to 1200 should be given. The nicotine may well be combined with Bordeaux mixture. It is essential to hit the under side



Potato vines showing curled, diseased leaves attributed to the potato leafhopper. (Orig.)

of the leaves. If the nymphs are not all killed another like application should be given ten days or two weeks later.

By keeping potato plants well covered with Bordeaux mixture and applying nicotine sulfate when nymphs are present in abundance the best protection from insect attack and disease may be expected.

John E. Dudley, Jr.

ELM AND MAPLE LEAF GALLS

Numerous inquiries have recently come to this office regarding some "disease" attacking elm or maple foliage. The injury to elms

has been in the nature of small light-colored globular-like galls. These galls are caused by small mites which look like tiny spiders. They live within the galls and thus cannot be reached by sprays.

The galls formed on maple leaves are of two kinds; the most common of which is red or black and somewhat globular which is also caused by a mite. Often large numbers of these reddish galls appear giving the trees a conspicuous and unusual appearance. One informant speaks of them as "reddish colored bunches —in some cases a hundred or more of these bunches on one leaf."

Another type of gall on maple leaves which is not so common but has come to our attention is the maple leaf spot; it appears to be due to a fungous disease rather than to an insect. The spots have a green center with concentric rings of yellow and deep red, 1/8 to 1/4 inch in diameter. These blister galls are caused by small larvae or worms, the adults of which belong to a group of flies called gall midges.

Very little experimental work has been accomplished in methods of control for these pests of shade trees. Mites on fruit trees hibernate about the bud scales and can be destroyed by spraying with lime sulphur during the dormant season. It is possible that the same spray may be effective against these pests and having no other remedy it is worth while to apply when practical. Use at a strength of one gallon of the spray to 10 gallons of water.

Charles L. Fluke.

A meeting of the Women's Auxiliary is called for August 19th at Fort Atkinson.

Mrs. E. S. Roloff, Pres.

A Tree in France

The campaign for funds to aid the horticulturists in devastated France closed June 1st but not soon enough to announce contribution in the June number of WISCONSIN HORTICULTURE.

The returns have been surprising.

The revelations of generosity and deep feeling for suffering shown in the letters accompanying many of the gifts are of priceless worth.

That the total number of contributors is small compared with our membership is, beyond any doubt, due to the wording of the appeal which led many to feel that only comparatively large contributions were expected. While just the opposite was true there is no cause for disappointment for the sum total was, to the editor most surprisingly large. The list was intended only for members but a certain young people's church association inveigled the editor to attend Sunday evening session and urged him to accept the regular contribution for the tree fund. When the project was launched the Board of Managers, after much discussion, agreed to plant three trees each. The president wanted it specified that his should be Maiden's Blush, while the vice-president wanted only Wealthy, the secretary chose Hibernal.

Their names head the list, when you reverse it.

Subscriptions to the Plant a Tree in France fund, in order received.

R. B. Lang, Racine	$ 9.00
A. Martiny, Lake Geneva	5.00
Dr. W. H. Macdonald, Lake Geneva	1 50
H. P. Yale, 3011 State St., Milwaukee	7.50
Ernest J. Muller, Waukesha	1.00
Wenzel Prochazha, Watertown	1.50
John D. Jones, Cuba, Wis.	10.00
Edw. Renak, Racine	1.50
Frank H. Rogers, Fort Atkinson	.75
Emma E. Patterson, Burlington	7.50
Emma Jacobson, Chicago, Ill	1.50
Geo. B. Smith, Green Bay	1.00
Dr. D. B. Collins, Madison	1.00
W. J. Buckley, Milwaukee	1.50
E. S. Brindley, Richland Center	.75
Geo. W. Buckstaff, Oshkosh	4.50
Lake Geneva Gardener's and Foremen's Association	10.00
Malachi Ryan, Appleton	1.00
J. R. Williams, Montello	1.50
C. O. Tanberg Jr. Hibbing Minn.	.75
T. J. Conway, Zumbro Falls, Minn	1.00
Mrs. W. J. Brubaker, West Allis	.75
Mr. and Mrs. Coley Strong, West Allis	1.50
Mrs. S. Simmons, Lake Mills	1.00
Geo. Raymer, Pasadena, Cal.	6.00
Young People's Association, Unitarian Church, Madison	3 00
Oshkosh	2.25
N. A. Rasmussen, Oshkosh	2.25
John A. Hays, Gays Mills	2.25
F. Cranefield, Madison	2.25
Cash	1.20
	89.75

Mow the lawn frequently and fertilize occasionally if you want it kept in good condition. Don't let the grass get long. It is harder to mow and weakens the growth.

Tomatoes trained to stakes do not yield quite so much as when in bush form, but the fruit is better colored and larger.

Orchard Notes from Illinois.

Mr. William Toole, Sr., who attended the convention and fruit show of the Illinois State Society held in Chicago last December returned with most interesting notes on the papers and discussions presented at the convention. While these have not been edited by Mr. Toole nor submitted by him for publication the editor takes the liberty of publishing the original notes and is of the opinion that our readers will agree that the notes contain very much valuable information in concise form.

Crown rot is serious, entailing a loss in some orchards as high as 30 per cent, caused by soil conditions including lack of drainage.

Fruit buds are seldom winter killed. It is a mistake to think that winter injury to bark only happens on southwest side of tree. Careless observers often mistake mice injury for winter killing. Drouth often causes serious injury. Crown gall very much weakens trees in the orchard.

Root rot is serious in southern part of the state. Canker on limbs and trunk is frequent cause of death. There are physical causes like lack of nutrition and lack of congeniality between scion and stock. Grimes Golden gives out at about twenty years old. Top working that variety on congenial stock is recommended. Canker causes 50 per cent of all losses. Cutting out soon enough stops spread of the infection. Cut out dead material first, next cut around the edge of healthy tissue and remove the border, keeping knife sterilized with bichloride of mercury, also spray the newly cut surfaces with the same. Spray the finished work with gas tar to keep out wooly

INTERNATIONAL APPLE SHIPPERS ASSOCIATION

(Continued from page 153)

each variety. An exhibitor may limit his exhibit to a single plate of one variety or he may enter as many of the varieties specified as he desires.

These classes require a separate exhibit from the Group Classes. The plates are not interchangeable. In other words plates cannot be withdrawn from the Group Classes to fill these classes. The same varieties, of course, can be entered in both the Group and Single Plate Classes, but not the same identical apples. Exhibitors entering both the Group and Single Plate Classes should use due care to clearly specify the particular fruit intended for this special class so that no error may occur.

Single Plate Sweepstake Prize

The plates winning first prizes in the above classes will constitute a Single Plate Sweepstakes Class, and a Silver Cup will be awarded to the best plate in this Class.

Basis of Judging

In judging the Exhibit, the following features will be considered and will count when perfect as the scale of points indicates. The scale is the standard of perfection and indicates the relative importance of the various points. Exhibits will be judged on this basis.

Scale of Points

Quality—(Including appearance, smoothness, regularity of form and freedom from blemish)	50
Size—(As representing the section from which it comes at that season of the year)	40
Color—(As representing the section from which it comes at that season of the year)	10
	100

It should be noted that Color is relatively Unimportant. This is made so because the season is not far enough advanced at the time of the exhibit to allow it to be given a greater value.

General Notes

Limitation of Classes

General Group Classes—The General Group Classes carrying with them the President's Cup are open to the world-growers, dealers, associations or selling agencies. It is not necessary that the fruit exhibited be raised by the person who exhibits it, or that it come from a single orchard or a single owner. It must, however, be exhibited as the product of the State where it was actually raised.

Single Plate Classes—These classes are limited to Growers showing the product of orchards owned or leased by them.

What to Exhibit

It is fully recognized that fruit is not matured by August 13th. The question of maturity has nothing to do with this exhibit. An immature apple has just as great a chance as a matured apple, providing it is up to the standard for its particular section or state, at that season of the year.

In other words the variety of seasons in the various states is taken into account by the judges in making their awards, and everyone is on an equal footing, regardless of weather the fruit is fu l grown or not.

(1) We want this year's fruit. Take it as it is on or about the date of the exhibit.

(2) Commercial varieties are wanted, and the awards will be upon this basis.

No entrance fees. You are also welcome to arrange your own exhibit if you desire.

Number of Varieties

It is not necessary that you exhibit the full maximum number of varieties mentioned in the Class Rules to be eligible to an award, providing your exhibit, whatever its number, truly represents the Commercial Varieties of the state or section it purports to represent. You may also exhibit a greater number of varieties than required, with the understanding that the excess is not to be considered in competition.

From 5 to 8 apples of each variety are sufficient. More may be shown if desired.

How to Send an Exhibit

1. Pack each variety by itself in a carton, paper bag or other container with the Name of the variety clearly indicated on or inside such container.

See that the apples intended for the General Group Classes are kept separate from those intended for the Special Single Plate Classes and indicate distinctly for which Class the respective apples are intended. Many exhibitors fail to name their apples or the names are so mixed with the various varieties, that it is impossible to distinguish and separate them. Such exhibits will necessarily have to be rejected. Name Your Varieties—Mark them Plainly. Keep Each Variety Separate. Enclose in the general package in which your entire exhibit is sent a complete invoice giving the names of all the varieties sent. Fill out and mail the enclosed invoice to Charles Keebler, Hotel Pfister, Milwaukee, Wis., Chairman of the Committee in charge of the exhibit so that he may arrange space, trace delayed shipments and avoid errors. The above instructions are very important. Do not fail.

2. If you do not bring your exhibit personally, send it by express, or any way you choose, to Charles Keebler, Hotel Pfister, Milwaukee, Wis.

3. Exhibits in many instances may be sent by parcel post if carefully packed, protected and started in time. Consult your local postmaster as to weight limits.

4. Take special care to see that all exhibits are carefully and tightly packed to prevent bruising in transit.

5. Cold Storage—If apples are desired to be sent in advance of the exhibit and held in cold storage, send them to Charles Keebler, Wisconsin Cold Storage Co., 178 Florida St. Milwaukee, Wis. Mark on the package "Apple Exhibit, International Apple Shippers' Association." Write Mr. Keebler, at 299 Broadway, Milwaukee, advising him of fruit thus sent in advance. No charge for cold storage or cartage.

When to Send Your Exhibit

Time it to arrive at Milwaukee, Monday, August 11th. Allow for delays in transportation.

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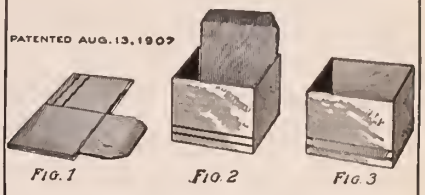
aphis. Make trimming and pruning of diseased wood a separate work from general pruning.

Cost of production of apples; total including overhead cost, 40.8 cts. per bu. of salable apples.

Prof. A. J. Gunderson on spraying: There are still problems to solve but much good has already been accomplished. Apple blotch is a serious trouble in southern Illinois and is extending northward. Its advancement should be checked. It is important to cut out water-sprouts and dead wood before spraying. Spray with lime sulphur three and five weeks after blossoms fall. Worst infection is five to six weeks after full bloom. Liquid spray is superior to dust. He prefers the rod spray with disk nozzle to the spray gun. Lime sulphur is a good spray for apple scab but late in season if temperature is above 85 would use bordeaux mixture at 3-4-50 strength. Would spray for codling moth with 1 lb. dry arsenate of lead to 50 gallons of water, at fall of bloom, also 3 and 5 weeks after. For second brood would spray 10 weeks after fall of bloom and also in September for late moths if weather is hot and dry. There is a division of opinion regarding efficiency of the gun spray. One man uses the gun for lower part of tree and the rod for the upper part. Workmen like the gun spray because it is easy to handle. Some workmen refused to handle the rod spray after having used the gun.

Senator Dunlap gave a very interesting account of a trip among the orchards of California, Oregon and Washington. In the California apple district yellow and green varieties are preferred because red varieties do not color well. In manuring orange orchards Prof. Shamel has had very good results by opening furrows between rows of trees and filling with manure and then covering the same by throwing the furrows back. In Oregon they think they can promote fruitfulness by pruning. In Washington diseases and insect pests are increasing. They think



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Crates, Bushel Boxes and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.
Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

fruit dropping is caused by deficiency of both plant food and moisture.

Prof. Lloyd talked about fruit and vegetable storage houses especially for apples. Storage buildings belong to two classes, those with ice cooling or artificial refrigeration and those not provided with refrigeration, built either above or below the ground surface. Cold storage facilities are most needed near point of distribution to save shipment in severely cold weather. Any place having a population of 5,000 or more should have cold storage facilities for fruit and vegetables. Bulletin on construction may be had from the Illinois College of Agriculture; also from the agricultural department at Washington. Prof. Kraus of Oregon talked of pruning. When trees are pruned the branches which are cut back the most make the least growth the following season. Leading or terminal branches outgrow lateral branches.

There are three general styles of training trees: First, the leader type which plans for a continuous center trunk. This makes for a tall tree until the branches are out of reach of pruning, after which the tree assumes its natural tendency of growth. Second, is the open center plan which is promoted by a general cutting back of all of the branches. This induces a broom shaped head and is the style mostly followed by those who advocate low heading. A third type is called a delayed open center, and embraces several leaders. His preference is for this type of tree.

Pruning is easy so far as cutting goes but too much is done thoughtlessly. The grower often prunes to let light and air inside of the tree. Don't do it. Too much pruning starves the tree. As a general rule trees come into bearing earlier if left alone than if they receive much pruning. Too much summer pruning induces water sprouts. After six or seven years of age trees should receive less pruning. Prune trees of vigorous growth but cut lightly or not at all if growth is poor. To renew old trees thin out instead of cutting back. Water sprouts may then be trained to become bearing branches. To promote fruitfulness in trees which are slow to come to bearing, pinch back in June the same season's growth to about the same length that you would cut back the same growth to, the following winter. Call the first growth in June the "A" growth of the season. Any growth following the pinching call the "B" growth. If B growth is vigorous cut it back at regular time of pruning the following winter. If B growth is light let it alone. This plan of promoting fruitfulness works well on varieties that have a tendency to bear on the last season's growth of wood. More money has been lost by over pruning than by pruning too little.

Fertilizing orchards by Prof. Kraus: Thousands of dollars have been wasted by applying commercial fertilizers which the soil did not need. Of the three classes of fertilizers, nitrates, potash and phosphates, nitrates are most commonly needed. Nitrate of soda is the form most commonly used. Continued use of this fertilizer in Oregon promotes an excess of alkali in the soil. Use five or six pounds to a tree in bearing. Spread broadcast as far as branches cover and not too close to the trunk of the tree. Use two-thirds when growth commences in spring and the balance two or three weeks later. Less benefit is derived if there is deficiency of humus in the soil.

Mulching promotes efficiency. It pays to raise mulch material on $100 per acre land to apply on $500 per acre land. Cover crops of legumes promote storage of humus and nitrogen; cover crops also may rob the trees of fertility and moisture. He prefers sulphate of ammonia to nitrate of soda but it is more expensive. Pruning has great influence on growth of trees and may be worked in opposition to the nutrition of the tree.

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Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
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Nursery Stock of Quality
for Particular Buyers
Have all the standard varieties as well as the newer sorts. Can supply you with everything in
Fruit Trees, Small Fruits, Vines and Ornamentals.
Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.
Nurseries at Waterloo, Wis.

THE I. A. S. A. CONVENTION

The apple show held in connection with the annual convention of the International Apple Shippers' Association is unlike any other fruit show in that *green* apples are shown. At first glance it appears ridiculous to exhibit apples less than half grown but this exhibit is not for the entertainment of the general public but for the information of apple buyers. Men who have been engaged for years in buying apples can form a fairly accurate judgment of the crop from partly matured fruit and Wisconsin growers will do well to exhibit at Milwaukee next month. The exhibit is of interest only to those who will have apples in car lots. The complete premium list and rules are given in this issue.

Secretary Phillips of the I. A. S. A. announces that there will be an exhibit of apple graders at the Milwaukee convention, August 13 to 16.

Vinegar Bees.

Vinegar making or the conversion of sweet cider into vinegar is a slow process requiring, under cellar conditions, several months.

Various means are employed for hastening the process. One of these, know as "vinegar bees," is quite common in the eastern states, but evidently has been but little known in Wisconsin.

Mr. C. R. Tuttle, of Baraboo, who has been engaged in vinegar making for years, recently secured some of the "bees" and sent samples to this office and to the horticultural department of the Minnesota College.

The sample sent here was forwarded to E. G. Hastings, professor of bacteriology of the Wisconsin College, and the Minnesota sample to Prof. Brierley. These gentlemen report to Mr. Tuttle as follows:

Mr. Cranefield has referred to us some material which you forwarded to him. This material has usually gone under the term of vinegar bees. This somewhat solid material contains both the yeast plant and the bacteria that are able to change the alcohol formed by the yeast into acetic acid, the acid which is present in vinegar. Thus when this material is placed in a sugar solution the yeast ferments the sugar with the production of alcohol, which is later changed to acetic acid. The

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Fifty Years Continuous Service
A Complete Stock of Fruit, Shelter and Ornamental Stock in Hardy Varieties for Northern Planters.
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The Kickapoo Valley
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Our Specialty: Planting and Developing orchards for non-residents
A few choice tracts for sale. If interested, write us.
KICKAPOO DEVELOPMENT COMPANY
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Grasselli TRADE MARK REG. U.S. PAT. OFFICE SPRAY PRODUCTS
INCREASE
Your Production and Profits
USE GRASSELLI
Lime Sulphur Solution
Arsenate of Lead Paste
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Bordeaux Mixture
Sulphate of Nicotine 40%
It Pays to Demand the GRASSELLI BRAND
Prompt shipments made from our Milwaukee Branch
Spray booklet and further information upon request
THE GRASSELLI CHEMICAL CO.
Milwaukee, Wis. Established 1839 Cleveland, Ohio

Cream City Dry Arsenate of Lead

Contains approximately 33% arsenic oxide, therefore has maximum killing power. Due to its fineness, is easily and uniformly sprayed, sticks longer to the plants and therefore gives the highest efficiency and economy.

Cream City Nitrate of Soda is a fertilizer which gives the plants an early start and supplies the necessary nitrogen.

Cream City Lime Sulphur 33° Beaume.

Manufactured by

CREAM CITY CHEMICAL WORKS

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bees will accomplish nothing more than can be accomplished by ordinary yeast such as compressed yeast and acetic acid bacteria which can be obtained from a variety of sources.

I have no information concerning the origin of the material. It seemed to gain a considerable reputation during the past few months.

E. G. Hastings,
Prof. of Agr. Bacteriology.

I understand that there has been a lack of information as to what "vinegar bees" might be. The common way in which "vinegar bees" are prepared is to take the cake from properly prepared vinegar, usually as the finished vinegar is being racked out of the barrel, and run this slimy cake through a medium to coarse sieve, which breaks it us into the small particles from one-eighth to one-fourth inch in general diameter. This material is then mixed up in some of the good vinegar and can be used as a starter when making cider vinegar in barrels or casks.

As you will note, the bees have no relation to yeast. Yeasts are commonly used to assist in the first or alcoholic fermentation in vinegar making and the bees or clear vinegar used for a vinegar starter, adding this latter to the hard cider. In my studies of the vinegar making qualities of Minnesota apple varieties I have found that, for varieties which will make a standard vinegar strength, nothing is gained by either the use of yeast or starters, and for varieties which do not seem capable of making a standard strength vinegar, a starter can have no appreciable effect.

W. G. Brierley,
Asst. Prof. of Horticulture.

Unsprayed trees in certain Iowa orchards produced in 1917 an average of 2.4 bushels; sprayed trees, 5.4 bushels. Not only was the quantity doubled, but the quality went from 9 per cent clean in unsprayed, to 81.3 in the sprayed orchards.

This Space For Sale

Terms Reasonable

They Admit It.

You can buy or sell to advantage by advertising in "Wisconsin Horticulture." Try it.

Dried Cranberries

Cranberries may be dried to extend their season. They are valuable in giving color to sauces and desserts. Add a few to puddings and sauces to improve flavor and color.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume IX | Madison, Wisconsin, August, 1919 | Number 12

Ages ago Indians trod this winding, shadow flecked pathway. Now tourists more peaceful but often holding more lightly the rights of others mar its beauties.

TOMATO DISEASES

J. E. Howitt, Guelph, Canada in Canadian Horticulturist.

The tomato is a comparatively healthy crop, but nevertheless it is subject to several diseases which are serious enough to cause appreciable financial loss to the growers. Chief among these are Blossom-end or Point Rot, Leaf Spot or Blight and Tomato Mosaic.

Blossom-end or Point Rot was very prevalent during the summers of 1917 and 1918. Many growers lost from 10 per cent to 50 per cent of their crop from it. The first symptom of the trouble is the appearance of irregular water-soaked areas near the tip of the fruit, usually when it is about half grown. These areas later become flattened or sunken and dark gray to dark brown in color and hard and leathery in texture. Later, fungi and bacteria may gain entrance through these injured spots and induce a rot which may destroy the whole fruit.

Blossom-end or Point Rot is a so-called physiological disease, not being due to any organism but to some condition within the plant itself probably induced by its environment. It appears to be due to an intermittent food and water supply and is worse in summers when we have prolonged heavy rains followed by periods of severe drouth. There is very little exact knowledge concerning the control of this disease. Observations, however, would lead the writer to believe that the following precautions will reduce the loss from this trouble:

1. Avoid over-forcing the plants, especially in the early stages of their development.

2. If possible water regularly throughout the growing season so the tomato plants are never allowed to become thoroughly dried out. Such regular watering is possible on small garden lots but is not possible in large plantations unless some system of irrigation, such as the Skinner System, is installed.

3. Avoid heavy applications of farmyard manure if the crop has suffered from Blossom-end Rot the previous year.

Leaf Spot or Blight

Leaf spot or blight is the most destructive fungus disease of tomatoes in Ontario. It attacks the leaves and stems of tomatoes and is extremely hard to control. Small, grayish-brown, angular spots, containing minute black specks, appear upon the leaves and stems. The lower leaves are first affected and the disease spreads upwards, almost completely destroying the foliage of the plants. The organism which causes the disease is carried over the winter in rubbish in the soil of the field, greenhouse or hotbed.

Leaf spot or blight can be prevented by spraying with bordeaux mixture, 4.4.40 formula. Commence spraying when the plants are in the seed beds and repeat at intervals of ten days or two weeks until there is danger of staining the fruit. With small patches of tomatoes it is often advisable to prune, stake and tie up the plants for greater convenience in spraying. The diseased tops should be raked up and burned in the fall if practicable tomatoes should not be oftener than once in three or four grown on the same piece of ground years.

The Practical Efficiency of Our Common Insecticides

Prof. H. F. Wilson, College of Agriculture.

Spraying is now a very necessary part of farm practice for the control of insects on orchard, farm and garden crops. A cheap and efficient spray, easy to handle and easy to apply is the desire of both grower and manufacturer. In other words what we need is a spray material that will kill quickly and at the same time involve a minimum of labor and expense for its application. Spraying is especially desirable at this time when a maximum crop is needed in order to help feed the European nations.

The value of an insecticide is based on its power to kill or to repel insects. An ideal insecticide may be said to have the following qualities.

1. It must kill the insect before the latter can seriously damage the plant.

2. It must not possess any properties which will cause injury to the plant.

3. Its cost must be sufficiently low to permit its use in large quantities.

4. It must spread and stick well to the surface to which it is applied.

5. It must remain sufficiently well in suspension to permit of a uniform coating of poison on the sprayed parts.

Arsenic, the base of all important insecticides now used against chewing insects, is a substance which cannot by itself be used with safety on plants because of its tendency to burn the foliage. In combination with other substances, it acts as a poison to insects but does not cause harm to plants unless in a liberated form as arsenic

oxide. The principal substances with which it is combined for spraying purposes is copper used in making Paris green, zinc in making arsenite of zinc, lead in making arsenate of lead, and calcium in making arsenate. These four poison sprays are the ones now mostly in use. A new material, arsenate of magnesium, has recently appeared on the market but we have had no opportunity to test its comparative value.

Paris Green. Paris green in comparison with other insecticides has a higher arsenical content than the other materials and a greater killing efficiency but it is not an economical spray material at 60 to 80c per pound and because of its tendency to cause foliage injury, we believe that arsenate of lead is a much more desirable spray to use. When Paris Green was first put on the market it combined 1% of free arsenic oxide but this is now greatly eliminated through present methods of manufacture and in time it is possible that a Paris Green can be manufactured that will not injure the foliage any more than the other arsenates. However, at the present time the percent of free arsenic oxide is so great as to cause much more burning than is generally realized by our growers.

How and When to Use: If Paris green is to be used for the potato beetle, it should be pointed out to the grower that it is not necessary to use more than 1½ to 2 pounds to 50 gallons of water or per acre if stated in those terms. In cases where greater amounts are thought necessary, it is either due to poor application or to a poor grade of material.

Arsenate of Lead. Without question this is the most desirable insecticide on the market today and is now more generally used than any other poison insecticide. The reasons for this are that when properly prepared, it is safe to use on the foliage of practically all plants and it stands well in suspension and sticks and spreads well on the foliage. It does not have quite the killing efficiency of Paris green but we have found the difference to be small in cases where pure arsenate of lead was used. It is necessary to point out that in our experiments, the so-called *lead hydrogen* and *not* the *basic* arsenate of lead was used.

The insecticide manufacturers and chemists know arsenate of lead in two forms. In each one the arsenic forms a different combination with the lead so that the one known as lead hydrogen, acid, or diplumbic arsenate of lead, there are two parts of lead and one part of arsenic oxide forming a material with 33% poison in it. The second form of arsenate of lead known as basic, neutral or triplumbic arsenate of lead forms a combination in which one part of arsenic oxide is combined with three parts of lead and in which the poison amounts to 25% of the total.

The basic lead arsenate forms a much stronger combination between the lead and arsenic than does the lead hydrogen arsenate of lead and is therefore a more stable spray. It does not break down as rapidly in the presence of water or air and is the most desirable spray to use on tender plants in certain climates. However, the very fact of its extreme stability makes it an undesirable spray against insects which do not seem to be quickly affected by poison.

The lead hydrogen arsenate is a less stable product and is more easily broken up in contact with air, water or other chemicals and for this reason is a much quicker acting poison and has a higher killing efficiency than the basic form. This fact also makes it somewhat more dangerous to use on the foliage of tender plants and under certain conditions, severe foliage injury is liable to occur.

The present methods of manufacture are such that the free arsenic in either one of these materials is limited to a minimum and in our experiments in Wisconsin we have found practically no injury resulting from the use of lead hydrogen arsenate and recommend its use entirely. The differences in the killing efficiency of these two materials probably accounts in a large measure for the unsatisfactory reports that have come in regarding the use of arsenate of lead for the Colorado potato beetle. The basic or triplumbic form is so slow in its action that very poor results are obtained when used against this insect. On the other hand lead hydrogen arsenate in small amounts gives immediate and efficient results. It should also be noted that where the basic lead arsenate is used that while the insects which have fed on it do not die immediately, most of them become sick and do not feed.

How and When to Use: This material comes in a paste or powdered form and in the paste form should be used just twice as strong as the powder. For Colorado potato beetle use 2 to 2½ pounds of

(Continued on page 167)

WANTED—WORK

Married man able and willing to work wants work on dairy farm or market garden preferably where high-grade poultry is kept.

City bred but seven years experience on market garden. Wife willing to help in house or act as housekeeper. Address C. Wisconsin Horticulture.

CRANBERRY CULTURE

Edited by Mrs. S. N. Whittlesey, Cranmoor, Secretary Wisconsin Cranberry Growers Association

Cranberry Growing

I wish to say this in our way of growing cranberries. We took our winter flood off on the 27th day of March, and up to that date we had a very heavy bloom this year. But do not think that you should do this every year, because some springs are early and some are late. I would kindly recommend A. Searls & Son, for they have been successful growers. What I mean by successful growers is having an average crop every year. Do not be afraid to ask them any questions, because I know they will be glad to answer them. This year we started and put in some Searls' Jumbo vines. We ploughed the bog and put our ditches around the sections. Then we leveled it and then put on 2½ inches of sand. We got through planting on the 1st day of July, 1919, and so far there's not many weeds in sight. All the vines are growing nicely, but there will be some weeds coming in spite of all. Try and keep them out for at least three years. In going to the expense to plant marsh that way, get the very best vines you can. Ones that will yield good. Ones that will raise a fancy kind of berry. A good keeping quality and they will bring a good price and you will never be sorry for all you went through. Yours truly,

Carl Getsinger.

The thirty-second summer meeting of the Wisconsin State Cranberry Growers' Association will be held in the Grand Rapids street car pavilion near Nekoosa, Wis., August 12, 1919.

As many growers from away like to visit the Cranmoor marshes there will be no attempt at a morning session, leaving this time open for this purpose. Neither will there be an effort made this year for a picnic dinner as many prefer a hot meal which at this place is unattainable. However, any one desiring to take their lunch will find tables and other conveniences for their use. At the Herrick House in Nekoosa and the several hotels and restaurants at Grand Rapids good meals can be procured at prevailing prices.

Those coming by train will find the street cars running between Grand Rapids and Nekoosa very convenient and timely.

The meeting will be called to order by Pres. Searls at 1:30 p. m. sharp and it is hoped every one will make it a point to be on hand at the opening of the meeting.

Invitations have been extended to Prof. Whitson of the University of Wisconsin, Dr. Fracker of the State Entomological Dept. and Sec. Cranefield of the State Horticultural Society to address the meeting. Also to Mrs. F. R. Barber, the sweet singer of Warrens, to favor us with a musical treat. The balance of the afternoon will be taken up with crop reports and exchange of ideas affecting our welfare.

Let the attendance be large and every one come prepared to take an active part.

Some Observations

The old saying is as true today as it ever was. Do good unto all men as you have opportuuity. I cannot but think of the changed conditions under which we are now living, and especially along the lines of growing cranberres, and the sprit of unselfishness manifested by the growers in general.

I recall a little incident that took place about twenty years ago told by one of the growers at an association meeting. This grower had made a visit to the cranberry bogs of the east for the purpose of learning more of the methods then employed there in the growing of the berry. In the east they were then more up-to-date than here in Wisconsin having used more scientific ways of planting, caring for them, and in their harvesting, etc. This fact was known to the growers there, and they to a certain extent endeavored to keep this to themselves—a secret. In other words, they were a good deal like a clam—you had to pry it open to know what was on the inside. I had the pleasure of visiting these bogs in 1901 and what the grower said about keeping their methods a secret was partially corroborated. But we need not go to the east alone, for this same spirit existed among some of the growers here in Wisconsin. I remember that a number of years ago one of the growers had a fine crop while his neighbors had but few berries in comparison and they were wondering how this grower could manage to get such a good crop while theirs was insignificant. It was quite a while before any light was thrown out on the subject. He simply managed the water in a little different way than the others with the

changed results. Whether willfully or not the grower kept these things to himself I cannot say, but this one thing I have observed, that the growers are now very frank and open hearted about anything pertaining to the growing and handling of the cranberry, which surely is a good sign of the better conditions. If this spirit could prevail more throughout the world, what a grand thing it would be. If selfishness could be entirely eradicated how much better it would be for all mankind. Suppose for a moment that Luther Burbank or some of those men who have achieved such wonderful results with fruits and vegetables would have been selfish and kept to themselves the results of their labors, would not the whole world have been losers thereby? Certainly it would. We can apply this spirit in all things in life. We can see what the selfish spirit has done for Russia. The ruling class have kept to themselves blessings which should have gone to all alike, and now since opportunity has come to them to get things and a new found liberty, they do not know what to do with it. They are a good deal like a Texas steer on a rampage. Just simply doing things.

If my observations are correct, we certainly have made good progress, and the right spirit is more and more made manifest as we meet in convention.

Henry H. Gebhardt,
Black River Falls, Wis.

First Summer Meeting of the Wisconsin State Florists Association

The W. S. F. A. was organized in Milwaukee, September 10th, 1918, state fair week, forty florists participating. A constitution and by-laws were adopted and the following officers elected: President, C. C. Pollworth, Milwaukee; vice-pres., J. E. Matthewson, Milwaukee, secretary, H. J. Seel, Milwaukee; treasurer, G. Rusch, Milwaukee.

The first semi-annual or summer meeting was held in Fond du-Lac June 27th.

Nearly one hundred members were in attendance and at least one half as many wives of members.

No formal session was possible in the forenoon as the members crowding the hotel lobby were determined on getting acquainted.

Men who have transacted business for years with others were mighty pleased at the chance to meet face to face and become really acquainted.

The afternoon meeting was largely taken up with reports of officers and closing the charter.

One hundred and twenty-four were on the roll as charter members when the charter was declared closed.

Following the business session several problems of interest to the trade were discussed informally.

Secretary Cranefield of the State Horticultural Society extended to the Association an invitation to join the W. S. H. S. as an auxiliary giving to every member of the florists association full membership in the horticultural society.

The proposal was well received by the members and altho of necessity referred to their executive board there seems little doubt it will go thru at the annual meeting in September, which will be held in Milwaukee during the State Fair.

WISCONSIN HORTICULTURE

Wisconsin Horticulture is not published for the purpose of making money but exclusively for the benefit of the **People of Wisconsin.**

It is better,—for **Wisconsin** people than any other horticultural paper published. It tells the best varieties to plant in **Wisconsin,** the best methods of cultivation for **Wisconsin.** It's a paper for the home gardener and fruit grower as well as for the big grower.

"**We Answer Questions**" is the slogan of the Society. Every question answered, first by personal letter and then in the paper.

Every dollar received for fees (subscriptions) and advertising is put into the paper.

Honest nurserymen advertise in **Wisconsin Horticulture** and only that kind. The other kind cannot buy space.

The paper is worth **Ten Dollars** a year but may be had by any one for **Fifty Cents.**

This price, 50 cents, includes membership in the **State Horticultural Society.**

A dollar bill pays for two years.

Send Fifty Center, coin, money order or check to Frederic Cranefield, Secretary, Madison, Wis., and get a receipt for annual membership and subscription to **Wisconsin Horticulture** for one full year.

A DOLLAR BILL PAYS FOR TWO YEARS

AMONG WISCONSIN BEEKEEPERS

The Wisconsin BeeKeepers Page
Prof. H. F. Wilson Editor

The Bee and Honey Department at the State Fair Sept. 8–13 1919

The attention of all members of the Wisconsin State Bee-Keepers Association, and Wisconsin Bee-Keepers generally, is called to the approaching State Fair.

$460.00 are offered in premiums, which is a large sum, considering the interest taken by the Bee-Keepers at large. The management of the State Fair is willing and anxious to revise the bee and honey demiums, but cannot do so, unless justified by the active interest of the Wisconsin Bee-Keepers themselves.

The Department of Agriculture and the management of the state fair, are of the opinion, that the bee and honey industry of Wisconsin, and the state association, representing it, should make a much larger showing than ever before, if the expect the university, department of agriculture, and the legislature to fully comprehend the growing importance of bee-keeping in Wisconsin.

We will have in addition to the premium entries, an educational display and demonstration by the College of Agriculture. We are promised the largest and best display and demonstration of bee keepers' supplies, appliances, bees etc. by G. B. Lewis Co., the A. I. Root Co. and others. We must and will have a much larger display than ever before, and ask all who possibly can do so, to make one or more entries, and help making it the best the State Fair ever presented.

If you are disposed to participate, write Gus Dittmer, Augusta, Wis., Superintendent of the Bee & Honey Department, for information, premium book and blanks, stating what you are able or wish to enter, and satisfactory arrangements will be made.

All arrangements must be made, so that the entries will be at the bee and honey building during the week preceding the Fair, so that everything may be properly arranged before the opening of the Fair. The Superintendent will be on duty at the bee and honey building, Monday September 1st, and every day during the week, preceeding the Fair, to receive all entries and properly arrange and care for them.

Write at once and we will have time for all necessary correspondence and arrangement.

Gus Dittmer

Disposing of the Honey Crop

The bee-keepers of the United States now face the problem of honey prices for the present years crop. It is hardly to be expected that the high prices of last season can be secured but certainly the old prewar prices, inadequate for peace times will not do. Many bee-keepers are asking about the prices of honey and there seems to be no standard to go by.

Wisconsin bee-keepers are getting a very generous crop and if any great part of it is thrown on to the market early in the season, prices may be seriously injured.

Bee-keepers in general feel that 25 cents per pound for extracted and 30 cents for comb will be about right. A few are even asking more. Certainly we ought not to have to sell for less.

Let Us Meet at the Fair

In this issue President Dittmer, Superintendent of the Bee and Honey Department at the State Fair gives us an idea of what is expected of our Association this year. With a big crop at hand the members of the State Association ought to respond with many exhibits.

Unless we can make a big showing we are in danger of losing our exhibit space. If we show that we need it and will use more space it will not be a hard job to get an addition onto the building we are now to use. A definite site has been decided upon for this department and a new section will be added to the old building when necessary.

State Fair week is a good time for bee-keepers to get together and talk over the problems likely to be brought up at the winter meeting.

Let everybody answer the call of Brother Dittmer and be at the fair with an exhibit.

H. F. Wilson

Get some material such as vegetables, fruits, or flowers ready to exhibit at the state and county fair. You will help the show and learn something yourself.

Sow the seed of early ripening tress, such as elm and maple, as soon as the seeds are ripe. Stratify late ripening seeds in sands or sawdust so that they may not dry out.

Efficiency of Common Insecticides

(Continued from page 163)

the powder to every 50 gallons of water or Bordeaux mixture if the latter is used in disease control. This amount should cover about one acre. For codling moth and leaf feeding insects on fruit trees use one pound of the powder or two pounds of the paste to 50 gallons of water. For "cabbage worms" and other chewing insects on cabbage plants use one pound to 50 gallons of water and add one pound of laundry soap to make it spread and stick to the foliage.

Arsenite of Zinc: This material has come on to the market in recent years and next to Paris Green it seems to have a greater killing efficiency than any of the other insecticides given. However, it is somewhat variable in its action and more work is necessary to fully determine its value. In our experience it cannot be used with safety on fruit trees because of its tendency to burn or crimp the leaves. We have found it to be very efficient spray for potato bugs and have not noticed any injury to the foliage. It should be slightly cheaper per pound than arsenate of lead and would therfore make it a very desirable spray to use on potatoes and other plants with hardy foliage.

How and When to Use: Arsenite of zinc sold mostly in the powdered form or in a paste form when combined with Bordeaux and known as zinc Bordeaux paste. For the Colorado potato beetle use 2 pounds of arsenite of zinc powder to every 50 gallons of water or Bordeaux mixture if the latter is used. Directions for using the zinc Bordeaux paste are given on the package.

Calcium Arsenate: Calcium arsenate is a material which has received some attention from time to time and the few early experiments in which it was used seemed to show that it was not a desirable spray because of its tendency to cause spray injury to tender plants. Investigations have also shown that although it contains a higher per cent of arsenic oxide than arsenate of lead still it does not have the corresponding efficiency.

How and When to Use: Calcium arsenate may be used in the same proportions as arsenate of lead but in each case hydrated lime or unslaked lime should be added in equal amounts to prevent burning. When the lime is added it should be slaked in a small amount of water and poured into the spray tank before application. Calcium carbonate or air-slaked lime should not be used. For small gardens or garden plots 1 or 2 ounces instead of pounds in a three gallon pail of water may be used.

Garden Tractors

We have had several inquiries about garden tractors but have been unable to get any first hand information. A writer in the Market Growers Journal for July 1st writes in answer to a subscriber as follows:

In the issue of May 15 I saw an article in regard to garden tractors and am writing for further information. Do you consider them a practical machine for garden work, price considered? I have good ground for them to work in, a sandy soil. I would want to use one on Onions, Beans, Potatoes, Cabbage and Tomatoes. Can they be turned easily at the end of rows? What is about the life of one of them? They claim that the life of a large tractor is only two to three years, and if that is all the life of a garden tractor, it would be rather an expensive affair.—C. J. D., Colorado.

A significant incident has recently come to my attention in regard to the owner of the tractor of which I spoke in the Journal. An acquaintance of his, who bought a garden tractor last spring, has just sold it to Mr. Smith at a considerable reduction in price, after using it but very little. The former told me lately that the only good he could find in this tractor was that it would turn a grindstone very nicely. Here are two men, gardening on much the same kind of land, and partly for the same market, who have widely different views with respect to this machine. The reasons for this situation will help answer some of your questions.

Mr. Smith does much of his work himself, or his own sons do it. He is a powerfully built man who is not worried by the labor of handling a heavy machine. His whole family have considerable mechanical ability; they have three or four other gasoline engines around the place, and therefore are able to keep the tractor in good repair, spotting troubles before they become serious. The farm is rather stony, and this necessitates extreme care on the part of the operator, and, in the case of delicate seedings or breaking of the crust by means of hand implements, especially when crops are small.

Jones, on the other hand, grows crops on such a scale, and in addition is involved in dairying to such an extent that his work is done entirely by employees. He tells me that he has known men to stay away from work when he told them they would have to use the tractor next day. Men on his place knew too little about gasoline engines to keep the machine in order, and cared too little about the crops

(Continued on page 176)

Wisconsin Horticulture

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Secretary W. S. H. S., Madison, Wis.

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FORT ATKINSON, AUGUST 19 AND 20

Most every member in southern Wisconsin should attend the summer meeting and we are of the opinion most of them will do so. There will also be many from the north.

The "Fort" you know is just below that famous crossroad Jefferson Junction and can be reached without difficulty. For those who own automobiles it's a joke. The roads from everywhere pass thru Fort Atkinson and all are state highways.

Our headquarters, the Black Hawk Tavern, is one of the best hotels in Wisconsin and we have

PROGRAM SUMMER MEETING

Fort Atkinson, August 19th, 1919

Monday Forenoon

Country Parks: Discussion led by Prof. F. A. Aust, College of Agriculture, followed by

W. J. Mayle, Union Grove.
H. M. Higgins, Seneca, Ill.
W. Ames, Oregon.
E. H. Niles, Oconomowoc.
Miss Nellie McDonald, Oconto.
Mrs. N. A. Rasmussen, Oshkosh.
L. L. Oldham, Elkhorn.

Tuesday Afternoon

Strawberries: Varieties new and old: Discussion led by Herman Christensen, Oshkosh.

A small fruit survey; Prof. R. H. Roberts.

Insects affecting small fruits. Dr. S. B. Fracker.

Herbaceous perennials, new and old; a selection that will furnish bloom from April until November. Discussion led by W. A. Toole, Baraboo.

Recent investigations in cucumber diseases. S. P. Doolittle, Dept. Plant Pathology, University of Wisconsin.

WOMEN'S AUXILIARY

Program—Monday Afternoon

Canning fruits and vegetables—Mrs. L. G. Kellogg, Ripon.

Growing perennials from seed, and how to plant them after you have raised them—Mrs. C. E. Strong, West Allis.

Chickens—Mrs. John Geiger, Oshkosh.

Child welfare—Mrs. R. J. Coe, Fort Atkinson.

PREMIUM LIST

The following premiums are offered for exhibits of flowers and vegetables, at the Summer Meeting, Fort Atkinson, August 19 and 20.

Class I

	1st prize	2d	3d
10 vases of Asters, 1 doz. each	$3.00	$2.00	$1.00
5 vases of Asters, 1 doz. each	2.00	1.00	.50
Vase Asters, one color, 1 doz.	1.00	.50	.25
Display Dahlias, not less than 5 varieties	5.00	3.00	2.00
Display Pansies	3.00	2.00	1.00
Display Perennial Phlox, not less than 5 varieties	3.00	2.00	1.00
Display of Gladioli, not less than 25 blooms	3.00	2.00	1.00
Display of Annual Garden Flowers	5.00	3.00	2.00
Display Herbaceous perennials correctly named	5.00	3.00	2.00
For best specimens Fuchsia, Rex Begonia, Begonia of any other variety, Sword Fern, Asparagus Sprengerii, for each	2.00	1.00	.50
Best collection native flowers in arrangement and variety; varieties to be shown separately, each with card attached giving both common and botanical name	5.00	3.00	2.00

Class II

Snap Beans, 1 lb.	2.00	1.00	.50
Lima Beans, 1 lb.	2.00	1.00	.50
Cranberry Beans	2.00	1.00	.50
Two Heads Cabbage	2.00	1.00	.50
Six Onions	2.00	1.00	.50
Six Ears Sweet Corn	2.00	1.00	.50
Three Cucumbers	2.00	1.00	.50
Three Muskmelons	2.00	1.00	.50
Six Tomatoes	2.00	1.00	.50
Six Beets	2.00	1.00	.50
Six Carrots	2.00	1.00	.50
Two Egg Plant	2.00	1.00	.50

Class III

Best display vegetables grown by boy or girl under 16, in home or school garden. Twenty dollars divided pro rata.

Best display vegetables from "home" garden by person over 16. Twenty dollars divided pro rata.

Exhibitors in Class III may also show in Class II.

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bought up all the rooms in the house.

The program for Tuesday and the premium lists appear elsewhere. the Wednesday program, which is wholly in the hands of Fort Atkinsonites, is said to include a visit to the C. C. and E. nursery in the forenoon and something else in the afternoon and evening. There is much whispering and committee talk about it but we, their guests, are not to know about it until we get there. Well as the late Sanders, he was usually late, would say "Oh very well!"

Annuals

Meaning flowers that can be grown from seed in one season.

A strip about five feet wide and twenty long in the vegetable garden was set aside last spring for annuals. About May 10th or later seeds of fifteen varieties were planted, the seed mostly two and three years old, broken packets saved from former plantings: Aster, allysum, balsam, candytuft, marigold, petunia, snap-dragons, cornflower, portulaca, coreopsis, nasturtiums, poppy, zinnia, mignonette and kochia.

Of these all but the aster were in full bloom July 10th. The snapdragon and petunia were only a few days behind greenhouse grown plants planted a little later, while the asters are more thrifty and the foliage of a better color than greenhouse stock.

There are four rows with spots where seeds failed, filled with gladiolus and it will be a joy, if not for ever at least until November. Only one mistake was made, in planting so much of each kind. Six feet of row of Alyssum is too much, two feet is enough while a similar shortening of many other kinds would have allowed room for fifteen more varieties.

About Tomatoes

There *are* two ways about tomatoes and only two. Either you train them or you don't train them. If you train them to a single stem you will need all of your spare time and much that is not spare time in order to make a good job of it. No one but the amateur who is short on land and very long on time should attempt it.

What we started to say is this: If you have plenty of room and have set the plants four by four feet waste no time or material in racks or stakes or tying or pinching or any other foolishness. Just let them alone to sprawl as they will and you will have an abundance of fine fruit, five to ten times as much to the plant as compared with the single stem pole method and equally good in quality.

Gone But Not Forgotten

The striped beetle has now done its duty for the present season and retired from the field of action leaving behind a crop of larvae in the stems and roots of vines as a souvenir.

There would then seem to be nothing to be gained by continuing so painful a subject, except this: our college friends after careful investigation conclude that simple methods, such as dusting are of no value and that our only hope lies in coating the leaves, inside and outside, with Bordeaux mixture. Enter the successful market gardener who absolutely controls the beetle by dusting with air slaked lime. How about it? Many growers use tobacco dust combined with slaked lime.

One subscriber reports complete success this year by following directions in a little paragraph tucked away in a corner of Wisconsin Horticulture for May 1918, advising the use of slaked lime plus a small quantity of turpentine.

It's worth remembering for next year that the striped beetle is an able-bodied pest with a tremendous appetite but entertains a violent dislike for slaked lime.

THE INSECT PAGE

Conducted by the Department of Economic Entomology College of Agriculture

Reduce the White Grubs

This is the year when the greater part of the white grubs become full grown. They may now be found in cells in the soil in the pupa or resting stage and in about a month will change to the adult May beetles or June bugs. These will remain in the soil until spring when they will come forth to start another generation of grubs.

Plow the infested field deeply as soon as possible and thoroughly disk and harrow to break up the cells in the soil and crush the tender pupae and newly formed beetles.

L. G. Gentner.

The Corn Ear Worm

Every year the corn ear worm causes serious losses to corn in this state. Especially is this true of sweet corn.

The adult moths or millers are yellowish to olive green in color, with darker markings. They have a wing expanse of about 1½ inches. They begin flying at dusk and lay their eggs on the silks of the corn, also on weeds. The young larvae which hatch from these eggs feed on the silks and then burrow down into the ear and feed on the young kernels. The larvae vary a great deal in color, but are generally brownish or greenish with broad longitudinal stripes. When the larvae are full grown they burrow into the soil where they change to the pupae or resting stages from which the adult moths later emerge. There are perhaps three generations in Wisconsin, the last spending the winter in the resting stage 4 to 6 inches below the surface of the soil.

Control Measures

No practical control has yet been found for this pest on field corn, but on sweet corn, or corn raised for roasting ears or seed the injury may be considerably reduced by dusting the silks with lead arsenate powder as soon as they appear. The treatment should be repeated every three or four days as egg laying continues over quite a period. The dust may either be blown into the silks with a dust gun or dusted on through a cheesecloth sack.

By thorough and deep plowing and disking sometimes during the late fall or winter the greater part of the overwintering pupae may be destroyed. This will greatly reduce next years infestation, and will also kill many other injurious insects.

L. G. Gentner

The Control of House Ants

Most of the common house ants of Wisconsin are spoken of as large or small black ants, reddish brown ants, and tiny yellowish ants. All these kinds or species of ants usually come from out-doors and must be killed in one of three ways:—(1) by mechanical destruction, which is rather tedious and not always practical; (2) by poisoning, which takes the most time and, may not always prove successful; (3) by fumigation with carbon bi-sulphide where the nest can be reached. This treatment is not always dependable if the nest runs under the cement walk, a house-wall or a stump.

Mechanical measures consist of laying greasy bones or sugared sponges in the ant trails and when the ants have gathered in numbers plunging the bone or sponge into hot water; or digging up their nests and widely scattering them among the chickens. Ant-proof cupboards, food safes, or the removing of attractive food from the reach of the ants will usually cause the ants to not work in the house. Where the nest is not easily found, poison sweets may be set along the trails so that the ants will carry the poison to the hidden nest and feed it to the laying queen and brood before they are themselves destroyed by the poison. This method will in time completely do away with the ants as they are attracted to the bait.

Use tartar emetic, 1 part to 10 of sugar dissolved in 100 parts of water. Spread this on chips of wood or glass and place on ants trails out of the way of pet animals. It may be also combined with cold lard or a similar grease so that it will not evaporate rapidly. In case tartar emetic cannot be secured, an equally effective poison can be made by using 3 grams of sodium arsenite (soluble) in a spoonful of water, added to 2 lbs. of sugar dissolved in ¾ pint hot water. The poison syrup may be soaked on bits of sponge and placed along the ant trails.

Where the trail of ants is easily followed to a nest in the soil, carbon bi-sulphide may be applied, preferably towards dusk when

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most of the workers are at home. With a stick make three holes from three directions on the edge of the nest towards the center. As quickly as the stick is withdrawn each time, pour in an ounce of the carbon bi-sulphide and immediately close with damp earth so that neither ants nor gas can come out. One or more wet sacks laid over the nest will help to hold the fumes.

Attention Apple Growers

Professor G. C. Starcher, of Auburn, Alabama, has invented a simple and efficient fruit sizer that can be made at home. We have tried for several months to secure blueprints and specifications in time for publication in July or August Wisconsin Horticulture but without success.

Both prints and specifications may be had from Professor Starcher for one dollar and the materials cost about twelve dollars.

This sizer or apple grader gives as good or better service than many of the higher priced machines and can be made by anyone who can handle a hammer and saw. The purpose of this paragraph is to urge every apple grower in Wisconsin to send a dollar for the blue prints and specifications at once. You will never regret the investment.

If the home vegetable garden has been well tended to date there is nothing to do from now on,—except gather crops.

Quality Stock
Strawberries
Native Plum Small Fruits
Apple
WISCONSIN GROWN
for Wisconsin Planters. Read our Price List before you buy, and save money.
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Box 77, Janesville, Wis.

Look Out for New Corn Borer

By S. B. Fracker Acting State Entomologist

How profitable will corn raising be when the crop has to be sprayed and protected as carefully as potatoes?

This is a question which may well agitate anyone interested in the prosperity of the corn belt. The situation may be even more serious than the question suggests for the European corn borer whose introduction is feared can do as much damage to corn and many other crops as the Colorado Potato Beetle does to potatoes and no successful control has yet been devised.

During July, 1917, a field of corn near Boston, Massachusetts, was found infested with light colored catterpillars boring in the stalks and ears. Later the insects were identified as the European corn borer (*Pyrausta nubilalis* and were found over a territory of about 320 square miles in Massachusetts and covering two smaller areas in New York State. They are spreading rapidly.

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Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

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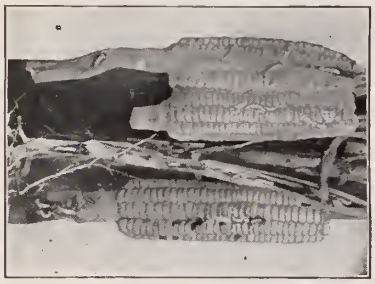
The Jewell Nursery Company
Lake City, Minn.
J. M. UNDERWOOD,
Founder and Pres.
Established 1868
Fifty Years Continuous Service
A Complete Stock of Fruit, Shelter and Ornamental Stock in Hardy Varieties for Northern Planters.
Agents Wanted

The principal food plants are sweet corn, field corn, fodder corn, celery, beans, potatoes, swiss chard, beets, spinach, dahlias, gladiolus, chrysanthemum, and several weeds. Corn is the favorite. In Europe and Asia corn, hemp, and millet are the most important economic plants attacked and a loss of 50 percent frequently results. In Hungary this insect is known to have destroyed one-fourth of the entire crop of field corn and the injury in some parts of Russia is estimated to be 90 or even 100 per cent of the total crop.



"Look out for new corn borer."

There are two generations a year in Massachusetts. The winter is passed in the larval stage within tunnels of the host plant in such places as corn-stalks or cobs, and the adult moths appear in June. About 350 eggs are deposited by each female. The young caterpillars bore into the stalk and ears, as many as fifteen having been found within a single ear of sweet corn. In the infested area in Massachusetts the borers have been found at the rate of 1,050,000 to the acre.

In 1918, before Massachusetts was quarantined, Wisconsin purchased enough seed corn from companies located in New York and the New England States to plant 30,000 to 50,000 acres. Any of this may have come from the infested region and may have carried corn borers in the cob. Wisconsin thus forms at present the most likely door by which the borer may have entered the corn belt.

One inspector of the state department of agriculture is being assigned to a survey for the pest in this state for the remainder of the season. He can scratch the surface but will need the help of every farmer in the search. Any larvae found boring in corn should be considered suspicious and sent to the State Entomologist at the State Capitol for identification.

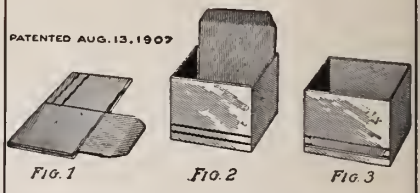
Horticulturists will often find large conspicuously striped caterpillars boring in dahlias and other thick-stemmed plants. These are known as "the stalk borer" and need not cause great alarm, but any small gray "worms" not over three-fourths of an inch long in such plants should be sent in.

Strenuous attempts to eradicate the borer completely from the United States are being made by the federal department of agriculture and they will appreciate cooperation in finding any new outbreaks especially in the Mississippi valley.

Mrs. E. L. Roloff, president, requests the attendance of every member of the Women's Auxiliary at Fort Atkinson, August 19th and 20th.

Refuses To Go

My auto, 'tis of thee,
Short cut to poverty—
Of thee I chant.
I blew a pile of dough
On you two years ago,
And now you refuse to go,
Or won't—or can't.



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Wauwatosa, Wis.

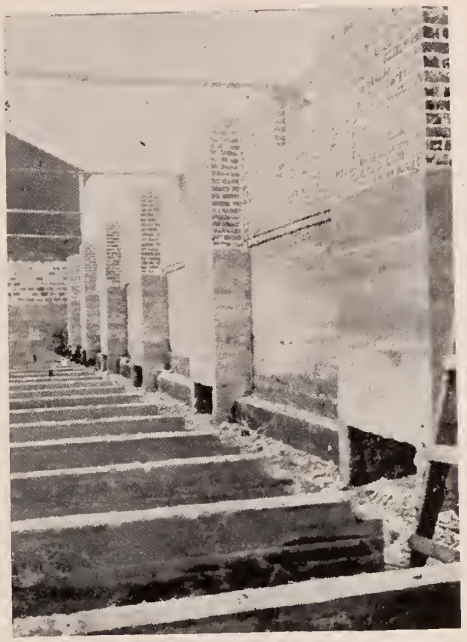
Efficiency of Common Storage Houses for Apples

By F. W. Allen, Assistant Horticulturist Fruit Storage Investigations, Bureau of Markets, U. S. Department of Agriculture.

As prerequisites for success in storing fruit of any kind, whether in cold or common storage, it should be sufficient to mention the necessity of having good fruit well grown, picked at the proper stage of maturity, carefully handled and stored as soon after picking as possible. With the importance of these fundamental factors fully appreciated, the efficiency of air-cooled storages depends directly upon three things: The location of the house, its construction, and the way in which it is managed.

The terms "air-cooled" and "common" storage are synonymous, but in using the former we imply the medium by which the fruit is cooled. In this type of house there is no artificial means of refrigeration, only the natural circulation of air. The cooler the air as compared with the temperature of the house the faster the circulation and the more rapid the cooling. In most of the apple sections of the Northwest the nights are generally quite cool, even though the days are warm. Any section having these cool nights is well adapted for successful air-cooled storages. In localities where the days are warm, with little reduction in the night temperature until quite late in the fall, the value of the storage is considerably reduced. In fact, the construction of this type of house in such regions should probably be looked upon with some discouragement.

In planning a common storage we should never lose sight of the fact that the building is to be cooled entirely by air circulation. A few small windows located here and there where they will fit in most conveniently will not accomplish the purpose intended. Air circulation is induced by the difference in weight of air at different temperatures. The weight of a cubic foot of warm air is less than a cubic foot of cold air. Warm air therefore seeks the higher level



Interior view of air ducts to a basement where the air inlet is built in the wall. With the intake doors on the outside at the level of the ground the cold air is delivered under the false floor.

and cold air the lower. For this reason intake air vents should be placed in the foundation wall, in order that the cold air may enter at the lowest point. After being drawn into the house this cool air expands, its weight becomes lighter, and with the continuous flow of cold air through the intakes it seeks an outlet through vents or an air shaft in the ceiling. The storage room floor should be not less than eighteen inches above the ground level and of open construction. Two by fours or two by sixes spaced three-fourths of an inch apart are recommended.

With this construction the ventilating system may be compared to a heating stove, where the cold air is taken in under the grate and the heated air passes up and out through the chimney. If we desire more heat, the stove is given more draft, that is, the intake openings are made larger. In order to cool the fruit in an air storage more rapidly, we do the same thing. The same principle applies, only the difference between the temperature of the intake and outlet air in the storage house is much less than that in a stove, consequently the circulation is much slower. For this reason the air vents must be numerous and of proper size. Eighteen by thirty inches is none too large and one such opening should be provided for every ten or fifteen feet on both sides and ends of the house. In extremely large buildings inlet openings should be twenty-four by thirty-six inches. The insulated or refrigerator type of door is much better than those made of only one or two layers of boards.

The flues or outlet ventilators should lead up from the ceiling of the storage room and out through the ridge of the house. By making these from four to six feet square only one or two such outlets should be necessary for the average individual grower's house. As in the case of the inlets, these should be likewise fitted with trap doors in the ceiling of the storage room. By installing such a system of ventilators the house is equipped with the cooling machinery. The efficiency of this machinery will depend upon the method of operation, as we shall see subsequently. Most air-cooled houses

are too dry for the best results. Tests of methods of adding moisture to the air are now under way, but as yet the easiest and most practical plan is to wet the dirt floor and walls of the house thoroughly each fall before putting in the fruit. This may be repeated to some extent during the storage season. The general size, arrangement and construction of the walls will depend upon the grower's particular needs and the amount of

Air intake on an above ground storage. Such an intake, opening directly into a basement, is improperly situated for most efficient cooling.

capital to be invested. Rooms for the combined use of storage and packing are undesirable. The packing room may be adjoining the storage room, or, in basement storages, the packing room is generally on the upper floor. Basements are more difficult to ventilate and cool than above-ground storages, although after once thoroughly cooled they generally maintain a more uniform temperature. In a basement house it is necessary to pipe the cold air down beneath the outside level in order that it may be delivered under the open base floor. The outlet air shafts in this case must also extend down through the room above the basement.

The walls of the house may be constructed of frame, tile, brick or concrete. In some sections storage-house walls are built of adobe brick. In selecting material and in the construction of the wall it should be remembered that the wall is not only for the purpose of keeping out low temperatures in winter but it should keep out high temperatures in the early fall and late spring. To protect the stored fruit from injurious temperatures, extremely high and extremely low, the walls should be insulated. Cork, mineral wool and quilting are materials offered for this purpose, although all of them are expensive. For frame constructed houses and buildings with wooden linings, dry mill shavings, where they can be secured, furnish a cheap and very efficient insulation. Doors and windows and the frames surrounding them should so fit as to be practically air tight else a well insulated wall will prove of little value. If storage-room windows are necessary, they should be fitted with double sash and wooden shutters. The doors should be of the refrigerator type. During the early part of the season when it is advisable to have these doors open at night a light slat door to keep out intruders is desirable.

In the above-ground type of house it is well to provide some means of insulating the ceiling. The roof is probably the warmest part of the building, and unless filled with shavings or insulated in some way is a weak part of a good storage. A light-colored roofing material such as white asbestos will be of considerable advantage in reflecting the sun's rays.

With ample means provided for ventilation or cooling the house; with walls, ceiling and other parts constructed to hold a uniform temperature, the final success of the house depends upon its management. A house built of the best materials and constructed along proper lines is of little value unless it is properly operated. Instances in no small number could be cited to prove that this is true. It is believed that it can be stated with perfect safety that less than one house out of ten is properly operated for the most efficient results. In numerous cases houses go through the season with only a pretense of management: a window is

Air intake to a basement storage where the air duct is built on the outside. Such openings should be fitted with airtight doors and be located about fifteen feet apart on the sides and ends of the house.

occasionally opened for a little fresh air or an oil stove is put in when the temperature reaches the danger point during the winter.

Efficient management of a cold storage for the best keeping quality of apples requires an immediate and uniform temperature of from 30 to 32 degrees. Efficient management of an air-cooled storage requires a consistent and continuous effort to approximate these conditions. The sooner the temperature in the storage room can be brought to 32 degrees, the longer and better the fruit will keep. There is no desire to intimate that air-cooled storages are equal to cold storages for long keeping, for this is not the case. However, with proper management

in order to reduce the temperature earlier in the fall and to hold it near the freezing point throughout the winter, quite different results will be obtained than those generally secured. This statement is

Open false floor made of 2 x 4 or 2 x 6 material spaced one-half inch or more apart, enabling the cold air taken in underneath the fruit to cool it more rapidly.

made after observing fruit and keeping many records in houses of various growers. Good methods and good keeping quality go hand in hand.

One or more accurate thermometers are essential for the successful management of a storage house. They should be tested at 32 degrees in crushed ice to see if they record the proper temperature. Place the thermometers in different parts of the house and consult them twice daily—not to see how cold the house is but to see how hot it is. Whenever the temperature of the house becomes warmer than the air outside, turn on all drafts, open the ventilators, both top and bottom, and allow as much air to pass through the house as possible. As soon as these temperature conditions change close all the ventilators and allow no warm air to enter. As a general rule, to follow these instructions means that early in the season all ventilators should be opened in the evening and closed early the following morning. The night air is cool, and within a short time after harvest it drops below the freezing point. This air will cool the storage, and quick cooling means better keeping quality. If, however, the vents are left open both day and night all advantage of the cool night air is lost during the day. This is the basis upon which many houses are operated, but it is not good management.

In answer to the statement sometimes given that it is difficult to keep the storage closed during the day when the fruit is being harvested, it might be suggested that in so far as possible the fruit should be allowed to remain under the trees during the night and should be hauled in early the following morning. This method has the double advantage of getting cool fruit into a cool room. Where it must be brought in during the heat of the day it might be left on the platform over night. Either method is preferable to putting warm fruit directly in the storage room. If this method cannot be

Packing room above, with storage below. The air intakes to the basement (where the shutters are lifted) are sufficiently large. The small outlet flues in the crown of the roof are entirely inadequate.

avoided the boxes should be taken in on a conveyor which passes through a small opening in the wall. This will allow much less warm air to enter the storage room than would come through a large door. The thermometers should be watched and the temperature kept on the decline. Each extra degree of heat in the storage early

A three-story packing and storage house. The packing room containing the windows is entirely separate from the storage a very desirable feature. The air intakes are located under the loading platform. Note the two large outlet flues.

in the season means several days off the life of the apple next spring. **The keeping quality of the apple is lost in the fall, not in the spring.**

As a further aid in quick cooling enough space should be left between the stacks of fruit in the storage so that the air can have free circulation around at least a part of each box. Main aisle ways in the house should be left directly in front of and above the intake windows. If fruit is stacked directly over these intakes it decreases their efficiency very much. Except in emergency cases boxes should not be stacked more than six or seven high. If stacked to the ceiling the circulating air is again cut off and the cooling of the fruit retarded. Whatever type of house one may own, or contemplate owning, good consistent management counts for more than anything else.

Better Fruit, July 1919

GARDEN TRACTORS

(Continued from page 167)

themselves to use proper care in running the tractor. Jones therefore found little good to say for the very machine that Smith could not do without.

These differences in men and conditions are at the bottom of every tractor problem. I believe that when the garden tractor is operated entirely by skilled and interested help, when there is sufficient acreage to require daily attention of two or more persons during the growing season, and where horses are not required for other farm work, the garden tractor is not only practicable, but that it will soon be recognized as almost indispensable. I have some doubts as to its utility on very stony ground and on very sandy ground. The stones tend to throw the machine to one side or another, often injuring growing vegetables. Though I have not seen the machine at work on very light sandy soil, I suspect that even with extension rims on the wheels it might not develop traction enough to do the required work. I was rather surprised several years ago to find a certain make of tractor a failure on sandy Sweet Potato ground. The actual pulling of plow or cultivator on that kind of ground was not a heavy demand on the tractor, but the loose sand gave no hold to the wheels. Probably your land is not as sandy as that.

It is not difficult to turn the macine at the ends of rows, though it involves a little more labor than to turn a horse. There is some saving of time, perhaps, as the rate of turning depends only on the activity of the operator and not upon the will of the horse.

I would judge that they could be kept in repair with less trouble than could a larger tractor. One must expect, however, to put in at least a few minutes exery day in oiling and cleaning, tightening bolts, etc. The life of the garden tractor depends entirely upon the amount of work it does in one year and the care taken of it. If it does enough work in one year, an owner might well afford to scrap it at the end of the first year. Probably with reasonable care and constant use it should last three years, and in that time it ought to much more than pay for itself. On the other hand, if used but rarely it might last much longer than three years. I think it would find its most economical use, however, when kept busy all the time and thrown away after two or three seasons. There are bound to be improvements, and no one wants to hold on to an out-of-date machine when something much better is available.

The application of the above remarks, if such application is at all possible, must be made by yourself. I wish I could say definitely for you whether or not you should get a tractor, but you realize, of course, that that is impossible. The final answer depends upon your own situation with respect to soil, type of gardening, acreage, and kind of men you have to work for you.

W. C. Pelton.

A clipping from the Milwaukee Sentinel of July 1st under the head "Fifty years Ago Today" says: "The Madison Horticultural society holds its thirty-third exhibition in Madison today." At first glance this seemed like a trifling exaggeration but on reading again we find that it is nowhere stated that it was the thirty-third *annual* exhibition.

The Madison Horticultural Society was organized in 1858 and is the oldest organization of its kind in the state ranking the State Society by seven years.

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